THEISM AND THOUGHT

WORKS BY

ARTHUR JAMES BALFOUR

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ESSAYS: SPECULATIVE AND POLITICAL

A DEFENCE OF PHILOSOPHIC DOUBT

THEISM AND HUMANISM

THEISM AND THOUGHT—A STUDY IN FAMILIAR BELIEFS

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A STUDY IN FAMILIAR BELIEFS

BEING THE SECOND COURSE OF GIFFORD LECTURES
DELIVERED AT THE UNIVERSITY OF GLASGOW 1922-23

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TO THE AUDIENCES WHO SO KINDLY LISTENED TO THESE CONCLUDING LECTURES OF A SERIES BEGUN, IN A VERY DIFFERENT WORLD, SOME NINE YEARS BEFORE, I GRATEFULLY DEDICATE THIS VOLUME

PREFACE

The present volume contains the second of the two courses of Gifford Lectures which ten years ago the Authorities of Glasgow University invited me to undertake.

The first was duly delivered in the Bute Hall during the early months of 1914. The delivery of the second was not completed till January 1923. They were therefore separated, not merely by an interval of more than eight years, but by eight years filled, and often over-filled, first by labours due to the world war, and then by labours scarcely less exacting, incidental to the making of the world peace.

These abnormal conditions could not but have some ill effects on the work they interrupted. For these it is vain to apologise; the kindly reader must make what allowances he will. But at least it may be said, either in blame or praise, that "Theism and Thought" carries forward, and in a sense completes, the line of argument which was begun in "Theism and Humanism"—a work which was itself in many respects akin to speculations which I had already given to the public.

The object of the two courses is the same—namely, to determine on what theory of the universe the highest values of ethics, æsthetics, and knowledge—the good, the beautiful, and the true—could be most effectively maintained. And the most orderly arrangement would certainly have been to take those great subjects in turn, and discuss them one after the other through the two volumes. But for various reasons this scheme was not adopted in the first course, and could not therefore be carried out effectively in the second—where, indeed, for special reasons it could not even be attempted. Had the second course been delivered in 1915, as was originally intended, a very sanguine lecturer might have brought himself to hope that the same audience would gather to hear the end of the argument as had already heard the beginning; and might even retain some recollection of what had been said the year before. But when the interval was not a few months but nearly nine years, no illusions were possible. Few of those who heard the first course were likely to be present at the second; and of those few, still fewer could be expected to remember the point that had been reached when hearers and speaker were separated by the war. It thus became obligatory to make the lectures of 1922–23 a self-contained series; and this in its turn made a good deal of repetition absolutely inevitable.

There has been another cause of repetition, which I have not succeeded in evading to my own satisfaction. It arises from the general character of an argument which, though dealing with many topics, deals with them much in the same way, and extracts from them much the same conclusion. The reader must sometimes feel himself like a wanderer in one of those forests where all the paths are planned to meet at last in the same central circus. There may be the greatest variety in the landscapes traversed, but there is a wearisome identity in the end attained. In like manner the iteration of the same moral at the conclusion of many different but similar lines of argument may easily become monotonous, and I cannot flatter myself that the danger is one I have wholly succeeded in avoiding.

The course as delivered consisted, according to custom, of ten lectures. They were in the main spoken extempore with the aid of brief notes, and I have made no attempt in the printed volume, either to recover the original wording or to retain the original divisions. The ten lectures appear here as twelve chapters, to which have been added two (the ninth and the last) which had no representatives among those actually addressed to my Glasgow audiences. Besides these I have reprinted, as an appendix, the chapter from the first series which dealt with "Probability, calculable and intuitive," without which the second series could hardly be regarded as self-contained—that is to say, intelligible without its predecessor. I should naturally prefer that the two series should be read consecutively, for in spite of the repetitions already referred to, both would, I believe, gain by such a procedure. But it is not necessary: and in the index at the end of the present volume they are dealt with together.

My grateful thanks are due to my brother Mr. Gerald Balfour, and my sister Mrs. Henry Sidgwick. They have helped me with the proofs and made many valuable suggestions.

A. J. B.

July 25th, 1923.

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PART 1

CHAPTER I

PROLOGUE

§ 1

SINCE I last spoke here Civilisation has received a shock under which it is still staggering. For four years and more[1] its whole machinery was dislocated—not less in the region of speculative effort and scientific discovery than in that of economic production and social life. Universities depleted, Professors devoted to war work, Science immersed in destructive invention, the voice of philosophy almost stilled—students flocking to the trenches to fight and die—such for four years was the tragic spectacle with which we all became so unhappily familiar. That, in such circumstances, the authorities of this great University, engaged as they were in reknitting the broken threads of academic life, should have desired me, even before peace was signed, to complete the half-finished series of my Gifford Lectures, is a rare and most valued compliment.

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[1] A melancholy underestimate! But I leave the words as I wrote them when I first set to work on the present course.

The task, however, has been delayed by many causes and beset with many difficulties besides those inherent in the subject. Some of these were personal, some were connected with University arrangements, but not least among them is the interval which has separated the first set of lectures from the second. Brief though the period may seem in retrospect, these tremendous years have dug a chasm between the past and present, more profound than any due to the mere revolution of the seasons. Even those here to-day who were among my kindly auditors in the spring of 1914 can hardly be expected to retain any very clear recollection of the argument which in "Theism and Humanism" I endeavoured to lay before them. To most of you who hear me for the first time even the faint assistance of these war-worn memories is denied; and for them at least it is necessary that I should begin the new course by a brief explanation of the point of view developed in the old—for it is this point of view which supplies the centre round which all the following discussions will turn.

§ 2

There was a phrase much in favour a generation ago, though less heard in recent years—

the "conflict between theology and science." This sometimes referred, of course, to the modifications which textual criticism, historical research, increasing knowledge of palæontology, anthropology, and comparative religions were thought to require in the ordinary presentation of religious doctrines; sometimes, and more fundamentally, to the alleged incompatibility of natural law and supernatural governance. With these matters I am not for the moment concerned. What I desire to speak of now is a more subtle form of antagonism, comparatively recent in origin, and largely due to the sheer increase in the range and depth of our scientific outlook. We all know, but we do not always remember, how great this increase is—and how modern. The ancients no doubt laid important foundations in mathematics, astronomy, mechanics, and anatomy. But they were foundations merely. For say sixteen hundred years[1] or more after they were laid, no important superstructure was attempted. Much was known of the practical arts of life —of architecture, road-making, ship-building, navigation, agriculture, medicine. But of the system of nature regarded as a vast and complex web of interrelated causes and effects, reaching outwards into unlimited space, and backwards through unlimited time, the ancients knew but little, and their mediæval successors knew still less. These were interested in the marvels of the material world, but cared little for its laws: so that after (say) the death of Ptolemy, philosophy, theology, and ethics had no serious rival in the minds and interests of thinking men. Even the cosmic theories of the Stoics, or the atomism of the Epicureans, were little more than the material setting of their ethical systems, and whether true or false, were neither arrived at nor supported by any process of experiment or calculation which the modern man of science would for one moment admit to be scientific.

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[1] Hipparchus died in 120 B.C. and Copernicus in A.D. 1543.

Now no one is, I suppose, inclined to minimise the prodigious change which, since the Renaissance, scientific discovery has made with ever accelerating speed, not merely in the social and economic conditions of mankind, but also in their cosmic outlook. Yet I think that there is one result of this movement not always sufficiently considered—perhaps because it cannot be properly described as a growth either in knowledge or in power, and is emotional rather than intellectual or practical in quality. I may best indicate its character by reminding you that the physical universe now supplies what it hardly supplied before, an object capable of absorbing the interest and filling the imagination of the greatest among mankind. It was not always so. If five hundred years ago a man experimented in chemistry, it was to turn lead into gold. If he studied the stars, it was to tell fortunes for a patron. But if he was a student and a thinker, a lover of knowledge for its own sake, a searcher after truth because it was truth, he had little choice but to be a scholastic theologian or a heterodox philosopher—until, indeed, the revival of learning permitted him, if he preferred it, to turn grammarian or commentator. He was unable, like the modern student, to steep himself to the lips in the knowledge of Nature—not merely, or chiefly, because he would probably have been burnt had he made the attempt, but because the attempt was at that time inherently impracticable. No massive body of natural science was then in being; nor came it into being till the modern era was far advanced. Remember that even the eighteenth century, the era of complacent "enlightenment," which piqued itself on substituting science for superstition and reason for enthusiasm, enjoyed but a comparatively narrow outlook on matter and on man. The nineteenth century was well on its way before the wave theory of light and the atomic constitution of matter were effectively appropriated by science. Electromagnetism made no great progress till its third decade. The conservation of energy was not thoroughly established till near 1850. The " Origin of Species " was not announced till nine years later. The message of the spectroscope was not scientifically interpreted till 1860, and it would, I suppose, be correct to say that men of science did not habitually think in terms of evolution till well into the second half of the Victorian epoch. The modern theories of atomic structure, the fundamental explanations of matter and of mass, are the work of investigators still in the prime of life.

§ 3

It is evident, I think, even from this summary survey that in the twentieth century we look out upon a natural world incomparably richer, more varied, more interesting, and more impressive than did Roger Bacon in the thirteenth century, Copernicus in the sixteenth, Galileo and Newton in the seventeenth, or Cavendish and Lavoisier in the eighteenth.

We need not be scientific experts to realise how far experimental fact has surpassed the most extravagant fancy in ministering to our appetite for wonders.. And if this be true of our knowledge of nature, something like it is true of our knowledge of man. To be sure our acquaintance with his unwritten history is trifling even now. The distribution and characteristics of existing races; the evidences of ancient migrations; rare ruins of unknown antiquity; some weapons, ornaments, and tools; a few bones; the graves where prehistoric man was buried; the pictured caves wherein he dwelt; the remains of animals on which he fed, constitute, I suppose, the main legacy left us by countless generations of our human predecessors. The story which these and other relics tell us is meagre enough; but at least they prove that there is a very long story to tell. Even three or four generations ago "history" meant the biography of a few favoured peoples through a few hundred years, drawn largely from annals imperfectly sifted, and legends sometimes too greedily swallowed, sometimes too hastily despised. But with the recent growth of knowledge we have at least gained some faint notion of the scale of things—we can conjecture the sort of temporal relation which the brief flashlight of documentary history bears to the long-drawn darkness of man's unrecorded past, and which this, in its turn, bears to the æons lightly played with by the geologist and the astronomer. The idlest of us may now enjoy a glimpse into an historical perspective denied, in the time of our great-grandfathers, to a Gibbon or a Niebuhr.

§ 4

Bearing all these things in mind, I suggest to you that some part at least of the alleged "conflict between Theology and Science" is not a collision of doctrine, but a rivalry of appeal; and that so far as Science, or rather scientific Naturalism, is concerned, the strength of that appeal is largely modern. For without professing dogmatic agnosticism, may not the scientific student speak somewhat as follows to one who is defending the theistic point of view? "You truly tell me" (he might say) "that man at his best cannot live content in the narrow prison-house of 'here' and 'now.' He longs for commerce with the infinite; and to meet his needs you give him a Deity who is endowed with all the attributes which, in your view, can excite admiration and reverence—who is omnipotent, just, and loving. You may be right and, in any case, I acknowledge that no such perfections belong to the Natural Universe which absorbs my interest and moves my admiration. But is not your Deity somewhat remote and his reality somewhat doubtful ? May I not be properly content with an object which, while certainly real and certainly present, is infinite in its magnitude, inexhaustible in its variety, and beyond comprehension in its fulness ? Do not its marvels sate our imagination, its riddles baffle our intellect, its beauties shame our art ? Will not this suffice ?

" If you tell me that amid all these wonders little room is found for reason or for righteousness; that beyond the infinitesimal circuit of one small planet, and an infinitesimal fraction of measurable time, we have no scientific ground for supposing that reason and righteousness exist at all, why should I dissent ? You may say, if you will, that to a well-trained imagination the worth of one conscious spirit outweighs the worth of an infinity of material worlds. It may be so. For myself I make no attempt to compare these incomparables. Yet I cannot treat the universe, though in the main it be no more than brute matter, as of small account. Mere size, as such, possesses quality as well as quantity; and to me the vast fabric of unthinking Nature, quite apart from its complexity and its mystery, seems, even in quality, sublime.

"True, it is not moral. There are those to whom it seems immoral. But, nevertheless, it may be a fitting nurse of the most admirable virtues. To devote days and nights to the pursuit of truth, to be sustained in this arduous endeavour by the hope that when truth is found it may conduce, as Bacon prophesied, to the 'relief of man's estate,' is an object great enough to satisfy our noblest aspirations. And though as knowledge grows the importance of man seems proportionately to shrink, though his history, seen in due perspective, is but a negligible episode in the endless flow of cosmic change, this also may provide a fit incentive to the exercise of the Stoic virtues. Dependent on a world which is indifferent or hostile, sustained by no glowing hopes for his future or for the future of his race, he may yet, in the practice of unrewarded worth, possess in patience his unconquerable soul."

So might a scientific student speak, with no prejudice against Theism, but doubtful whether it is now more than an incongruous relic of a vanishing past, not to be forced without violence into the framework of modern knowledge.

His appeal, we must admit, has weight—a weight which is not likely to diminish as time goes on. Consciously or unconsciously it moves vast numbers amongst the educated and half-educated dwellers in many lands, the nominal adherents of many religions. The man who is troubled about miracles, the man who stumbles over the Higher Criticism, the man who is repelled by the traditional forms in which religion is enshrined, or wearies of the well-worn phrases in which it is familiarly expounded, turns instinctively for relief to the newest learning. There he hopes to find a creed unembarrassed by haunting perplexities—a creed logical, lucid, convincing. Bare it may be of the spiritual elements which purify and console; but at least it is moulded upon visible realities, it conforms to unsophisticated reason, it proudly claims to be scientific, and stands unshaken on experience.

In my judgment he is mistaken; he will find no such creed. And I see no simpler method of proving this than by taking his own reflective beliefs about Nature, Morality, and Beauty, and showing him that their values cannot be maintained unless we are prepared to pass beyond them—that unless they be transcended they must surely wither. This way of approaching the world problems can hardly give us a philosophy; but it need not on that account be despised by philosophers, while it may perhaps appeal to some members of that not inconsiderable multitude who think that metaphysical speculation is even less worth the attention of serious persons than popular theology itself.

CHAPTER II

PROLOGUE (*continued*)

§ 1

THE material, then, on which I endeavoured to work in the early months of 1914 may be loosely described as the general body of our ordinary convictions about Nature and Man. At first sight there is perhaps something a little disconcerting, if not paradoxical, in this procedure. We seem to be inverting the proper order of inference. We are building up a scheme designed to embrace the universe, not on the things we believe, but on the fact that we believe them—a trivial piece of autobiography which falls lamentably short of the dignity of metaphysics. Whether the classic arguments for the existence of God which Kant labelled the Ontological, the Cosmological, and the Physico-theological were as bad as he thought them, we need not now discuss. But at least they had behind them a great philosophical tradition. They appealed to Reality and Infinity. Even the most modest of them all, the ancient though now unfashionable argument from design, was based on the facts of Nature, and may seem to compare favourably with one which strives to reach a similar conclusion, not from these facts objectively considered, but (in part) from our own loose and halting beliefs *about* these facts. I admit that this criticism is plausible. But I beg you to suspend judgment until I have removed some possible misunderstandings to which my mode of statement may have given occasion.

§ 2

In the first place, then, you must not suppose that when I describe our thoughts about men and things as a " body of beliefs " or as a " creed " I desire to suggest that they could be moulded into a well-defined system of immutable doctrine on the pattern of those hard-edged symbols in which old-time theologians delighted to crystallise their religious convictions. I speak of something much wider in range and looser in structure. Its outlines are vague. Its contents vary from time to time in the same person, and from person to person in the same society. Could we, for example, imagine the several members of this audience suddenly revealing their intimate thoughts and beliefs about beauty and goodness, about history, psychology, and physical science, about religion and irreligion, what strange discrepancies would the results display! There would not merely be the crude and familiar contrasts between knowledge and ignorance, between the beliefs we consider " false " and the beliefs we consider " true," but there would be endless shades of difference in emphasis, in colour, in fulness of meaning, in delicacy of discrimination. Yet we all share the same civilisation, we speak the same language, we live in the same period, we are citizens of the same State, and our meeting here this afternoon suggests that we are interested in the same problems. Great though our differences may be they are surely far less than those which would divide any equal assembly selected at random from among the general mass of mankind. How, then, can *their* beliefs--so vague and various, often so foolish and so false—supply any solid basis for far-reaching theories about the structure of the universe?

This objection, however, really misses my point. All that I am for the moment concerned to assert is what no professor of Naturalism is likely to deny—namely, that the beliefs entertained by us here to-day, and by our Western contemporaries elsewhere, belong to a late stage in a process of continuous development reaching back without a break to the vital processes of those lowly organisms which flourished before the Animal and Vegetable Kingdoms started forth on their separate lines of evolutionary adventure. These primitive beings had life, but had not reason; and they, in their turn, were produced in some unknown fashion, by a material system which, according to the ordinary view, had neither life nor reason. It is not easy to represent the stages which mark the transition from life irrational to life rational. Of those which mark the transition from the lifeless to the living we can, I suppose, form no conception at all.[1] But for my present purpose this is of no importance. Whatever be the hypothesis with which we endeavour to cover our ignorance of the past, and however we minimise the part played by unthinking matter in the mental activities of ourselves and our contemporaries, it is clear that, in the lengthening web of causes and effects which binds these periods together, few in number and late in time are the threads supplied by life, still fewer and still later are those supplied by reason. On the naturalistic hypothesis our beliefs, *all* our beliefs, be they wise or foolish, obvious or fantastic, true or false, are, as regards their proximate origin, largely non-rational; as regards their remote origin, non-rational altogether.

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[1] Unless we avoid the difficulty by adopting some form of pan-psychism.

On this contrast between the causes of belief and the reasons for it depends the argument embodied in my first course of lectures. It is the point on which the second course will also turn. If you ask me how this can be, seeing that I have after all said nothing which, at least in its broad outline, is not an obvious part of any theory of evolution, and that in theories of evolution there is nothing inherently anti-theistic, I reply that it is not what the evolutionary theory includes that is here important, but what in its naturalistic shape it deliberately excludes. I do not complain that it admits irrational elements among the causes of belief, but that in the last resort it admits no others. It thus leaves us and all our thinking the sport of forces which are irresistible but blind; reason, purpose, and guidance are refused all effective authority in matters of belief, and, if they seem to take a hand in the later stages of thought manufacture, this is mere "window-dressing." It deludes us in our unwary moments into supposing that when (for example) we have patiently reasoned out the solution of some perplexing problem, we have arrived at a result for which reason is wholly responsible. But this flattering conviction is, on the naturalistic theory, quite unfounded, though easily explained. It is due to the fact that we egotistically fix our attention on a single element among the innumerable antecedents from which our conclusion flowed. This single element is rational, and is ours. We brought it into being, and we are proud of it, and we measure its importance with parental partiality. But our partiality should not make us forget that it is but one of an uncounted throng of co-operating causes, scattered through an infinite past, none of them rational, none of them within our control, yet all contributing something required to produce the final result.

§ 3

I trust that I have now made two points clear. The first is that our beliefs may be regarded as the outcome of two quite different processes or kinds of process, the causal and the rational. The causal proceeds from antecedent to consequent, the rational from premise to conclusion.. No doubt there are elements common to both. A cause may be, and sometimes is, a reason. A reason not only may be, but always must be, an effect. Though the two kinds of process are essentially distinct, the one being concerned with the flow of events in time, the other with the connection of beliefs in logic, it is also true that every belief is without exception causally determined, and, in the last resort, determined by antecedents which are not beliefs, nor indeed psychical events of any kind, but belong wholly to the non-rational world of matter and motion.

To these two conclusions a third must be added which, from the point of view adopted both in " Theism and Humanism " and in the Lectures which follow, is the most important of all. It is that between the rational and the causal series, as I have just described them, there is, on the naturalistic hypothesis, not only contrast but collision. They will not live peaceably in the same intellectual system. They cannot be sundered, yet they refuse to coalesce.

For consider the relations in which they stand to each other. Reason, in the shape of science, traces the origin of all contemporary things and events back to the unthinking powers of the material world, and there it quite properly leaves them. Naturalism rejects the notion that these non-rational beginnings are, or ever have been, subjected to rational guidance. Science, therefore, if and when it be limited by Naturalism, itself proclaims the unqualified non-rationality of its own origins. But if its origins be non-rational, by what incredible coincidence does it turn out to be true—if true it is? And what tests can we apply to it which have not the same origins and do not suffer therefore from the same defects? On the other hand, if it be not rational, the conclusion of the argument has shattered its premises; and scientific naturalism perishes through the very completeness with which it has destroyed any theory of origins which involves a belief in reason, purpose, or design.

§ 4

Such is the root idea of the argument against Naturalism contained in my previous course and destined in this course also to meet us often again. For developments and ancillary discussions, and, in particular, for its application to Ethics and Æsthetics, I must refer you to the volume itself. But as in this lecture I have approached the subject mainly from the side of knowledge, there is one scientific answer to my contention on which it is perhaps desirable that something should be said before I attempt to break new ground.

The point may be thus stated: "Let it be granted for the sake of argument that the causes of belief, if traced back sufficiently far, are, on the naturalistic hypothesis, wholly non-rational. Is this conclusive? Has not the theory of natural selection provided a way out of the difficulty? Has it not shown how, in strictest conformity with Naturalism, creative design may be so happily imitated that Paley himself, though supported by a regiment of Bridgewater essayists,[1] could scarce have detected the forgery?"

Now the theory of natural selection was one of the greatest triumphs of the nineteenth century, and the fact that in the light of later research it does not seem able to accomplish all that we had once expected of it[1] can never shake its position as a turning-point in scientific speculation. So far, however, as our present discussion is concerned its inadequacy is evident, however highly we may rate its efficiency as an evolutionary instrument during the relatively brief period of its operation. We are considering, you will remember, the causal web which connects the beliefs of to-day, your beliefs and mine, with matter and energy in their primeval distribution—say, for example, as they existed in pre-stellar nebulæ. At some unknown moment in this long-drawn progression a planet was evolved possessing the extraordinary combination of attributes which, so far as science at present knows, are the necessary pre-requisites of any form of organic life. In this elaborate preparation selection of course had no share. Neither had it any share in initiating the next stage of evolution—perhaps the most revolutionary of all—the stage when life began. Before this event, we have no knowledge of anything being added to or subtracted from the sum of things. Worlds uncounted were born and perished; but the most tremendous of stellar catastrophes involved no more than a redistribution of what was already in being. Change followed change on a scale of inconceivable magnitude. But these merely physical changes brought with them no essential novelty. There was never in the effect anything that, in some shape or other, had not pre-existed in the cause. The cosmos never did more than re-arrange itself. But with the advent of life a new era began. I will not here assert (whatever I may think) that life even at its lowest levels involves more than the distribution of particular kinds of matter in particular patterns, whose actions and reactions are completely explicable by the laws of chemistry and physics. For, however this may be, there can be no doubt about feeling. thought, and will.[1] These are always more and other than material re-arrangements; and so far at least as our earth is concerned were certainly new—new, and surely most surprising.

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[1] As this reference may be obscure to my younger readers, it may be worth saying by way of explanation that about ninety years ago eight treatises by various authors, selected by the President of the Royal Society, were published on "the Power, Wisdom, and Goodness of God, as manifested in the Creation." This originated in a benefaction by the last Earl of Bridgewater, who died in 1829.

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[1] The reader may perhaps be tempted to ask why, if the theory of natural selection has proved in the light of subsequent research a less adequate explanation of organic evolution than at one time had been hoped, I do not substitute for it the last results of biological science. My answer is that, so far as I am aware, natural selection still supplies the only substitute on a large scale for "design," as this was conceived in pre-Darwinian days by, for example, the Bridgewater essayists above referred to.

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[1] See Chapter X of present course.

Natural selection did nothing to initiate this new departure; nor, indeed, could it do anything to further it, till life not only began to exist, but began to exist in organisms of a suitable type. When, by means as yet unguessed, there came into being (*a*) organic complexes, which (*b*) not only lived, but (*c*) multiplied, and (*d*) in multiplying produced successors which, speaking broadly, resembled them; though (*e*) with variations, which (*f*) were heritable—not, I say, till all these wonderful accidents had combined could selection set to work and elaborate the biological contrivances whose complicated mysteries scientific research is laboriously striving to unravel.

§ 5

Thus does it become clear that the intervention of natural selection in the causal sequence begins too late in the history of the Universe to provide human reason with even the imitation of a reasonable origin. But there is something more to be said. It not only begins too late for this purpose, it ends too early for another. Its effective operation dies away too soon to explain what surely call for explanation, namely our ideals of love, of beauty, and of knowledge.

For myself I have to own that this point seems to me of secondary importance. If these great things are ultimately the work of unreason, I care little whether in their immediate production unreason, in the shape of natural selection, has been masquerading as design, or whether it openly exhibits itself as blind chance. So far as I am concerned the result is the same. But some there are who take a different view. What they want is a scientific explanation. Give them this, and no incongruity between cause and consequence in the least disturbs them. If, therefore, any characteristic of the evolutionary process can be shown to possess survival value they are content. In their view all other values may perish and no one be a penny the worse. If what is highest and rarest in æsthetics, ethics, and thought will do for man what the most disgusting contrivances do for the most loathsome parasites—help them to eat and help them to breed—it suffices. All else is fanciful or false.

These thinkers do not suffer from excess of ambition, yet I doubt whether their aspirations, humble though they be, are fulfilled in the world as we know it. They are wrong in supposing that these supreme values seriously count in the struggle for existence. Saints, philosophers, and artists have never, so far as I know, been specially successful in rearing large families themselves; nor have they enabled the communities which admired, and occasionally produced them, to crowd out rival populations from the rich places of the earth. As Nature measures utility, they are useless. In no effective fashion do they make for survival. They are but casual excrescences on the evolutionary process, forming no portion of its essential texture. They are, on the naturalistic hypothesis, an accident of an accident.

Few things on the spiritual side of evolution are more interesting than this. It is not perhaps strange that the onward momentum of those developments which make for biological success should carry them into regions where all, or almost all, their survival efficiency vanishes away. But surely it *is* strange that in these regions they, or rather some of them, should acquire new and higher values which naturalism can hardly explain and certainly cannot justify. Primitive religions with all their crude superstitions, follies, and excesses, may have had value in the only shape in which this is recognised by selection. They may, in various ways, have directly aided men in the earlier stages of civilisation to maintain their numbers or to increase them. Doubtless, this is also true of primitive morality, primitive science, and perhaps also of primitive art. Those, therefore, who treat anthropology as a branch of natural history are quite justified in counting these things as due in part to the direct influence of the struggle for existence. But the struggle for existence has had no direct influence on their higher developments. What survival value has the love of God, as this is felt in the great religious experiences? What advantage was it to prehistoric man that the faculties of reasoning and imagination, whose humble beginnings were presumably bred into his ancestors by battle, hunger, and disease, should be so contrived as to develop into faculties which many thousands of years later would enable his descendants to pursue, with ardour and success, knowledge the most abstract, the most remote, and, at first sight, the most useless? What measurable effect upon the maintenance of the species has been caused by the development from animal appetite of romantic and impassioned love? Granting that natural selection may have promoted family affection and tribal loyalty, why should these blossom into a pure and ardent benevolence, embracing in its circuit all mankind, while singling out for special sympathy the "unfit" rather than the "fit"?

§ 6

And, lastly, what is it that in this connection we should say about Beauty—about the glories of creative art and the joys of æsthetic contemplation? As the readers of "Theism and Humanism" may perhaps remember, I have never been able to persuade myself that these have ever been of any measurable use in the struggle for existence. On the hypothesis, therefore, of Naturalism, their values are accidental in the first degree; they have behind them neither purpose nor the imitation of purpose; they hang, so to speak, in mid-air, unsupported and unexplained. Let those, then, who dream, like David Strauss, that the shrine from which they strive to expel religion can be worthily occupied by Art think of these things and pause. For they may be well assured that if they shatter the old values they cannot permanently preserve the new. If beauty is to retain its worth, it must be the product of design, and behind the delight in beauty there must lurk, however vaguely, the consciousness of a designer. When we are dealing with an ordinary work of art, the designer is, of course, the artist; and we are again faced with the problem how, on the naturalistic hypothesis, a chance variation like artistic genius, without survival value, happens to play so large a part in the higher life of the race. But if this be true of the beauty born of human effort, how stands the case with the beauty given us by Nature? Here there can obviously be no question of art or of artists. What we admire, what we admire indeed with a passionate admiration, is, according to naturalism, but the superficial aspect of matter casually arranged. Hurrying rivers, autumnal woods, gleams of sunshine on misty crags, the sea, the clouds, and all the rest of Nature's pageant are, on this theory, the accidental effects of molecules accidentally combined, and thereafter brought into accidental relation with human sensibilities, themselves, as organs for the apprehension of beauty, accidentally evolved. If such a theory leaves us unsatisfied we can hardly supplement its unrelieved materialism by reviving the nymphs of fountain and forest, the fairies of moor and dell. It must, I venture to suggest, be Theism or nothing, and of the two it must be Theism; for all these higher values manifestly press forward, each in its own way, to completion in God. As in God they must have their root if their values are to survive, so in God they must find their consummation if their promise is to be fulfilled. For Nature, limited by naturalism, can find for them neither a beginning nor an end which is adequate to their true reality.

If we doubt this, it is because we are still haunted by some ancestral ghosts. Men still talk, in true eighteenth century fashion, as if it were as "natural" for man to rise spiritually as for water to fall materially. Nature they treat as a well-meaning social reformer, striving, when not perversely thwarted, to make the world better, wiser, and happier. But Nature, as known to twentieth century Naturalism, is very different from Nature as imagined by eighteenth century Deism. It has no intelligible meaning and no benevolent purpose. If the theory of selection be true, purpose may indeed (as we have seen) have been successfully imitated. But even then the purpose is not to make men "Better, wiser, and happier"; but only to make them more numerous. To higher things selection is indifferent or hostile; and if among the by-products of its activities higher things have been indirectly produced, this result can only be due either to accident or "guidance." My verdict is unhesitatingly given for guidance.

Here, then, lies the essential argument which I developed in "Theism and Humanism," and which I propose to develop still further in "Theism and Thought." The difficulties I have been discussing can all be traced to one error, and can only be solved in one way. They arise from the ingrained assumption of Naturalism that for anything we know to the contrary the causal process is unguided. They can, I believe, only be removed if that assumption be definitely abandoned. Thus, and only thus, can knowledge, love, and beauty be given an origin congruous with their essential nature. Thus and only thus will they justify the values which the highest instincts of mankind have been ever ready to accord them.

PART II

CHAPTER III

THE ARGUMENTUM AD HOMINEM, PHILOSOPHY, AND SCIENCE

§ 1

SUCH in outline was the argument which I developed more at length in the Gifford Lectures of 1914. That it does nothing towards establishing a metaphysical system is plain enough; and this not merely through defects of exposition, though these I doubt not exist in plenty, but because the argument itself has a different and much less ambitious aim. It neither is, nor pretends to be, more than an *argumentum ad hominem.* It is an individualist appeal to the sentiments and beliefs of individuals. To every reader or hearer it says in effect that, unless he assumes the reality of a universe which is spiritually guided, the values, which in his eyes are supreme, must lessen and fade. It is not, for example, in a world where love and beauty are treated as the transitory and ineffectual accidents of material evolution that they will retain their values undimmed and undiminished. Would he avoid this catastrophe he must therefore modify the pure teaching of naturalism by infusing into his theory of the universe the ethical and æsthetical purpose of which naturalism can find no trace.

Now there are many persons to whom this line of thought, even when limited to the first two values, makes effective appeal. They attach no great importance to naturalistic negations; they are not seriously perturbed by the difficulties of optimism; and when they survey the splendours of nature or sound the depths of love, they instinctively shrink from regarding these as no more than undesigned effects of a soulless machine.

But there are others of a different temper, to whom the appeal, however moving, if limited to the case of love and beauty, seems insufficient for the task it is asked to perform. They regard it as a device for protecting beliefs of emotion—lofty emotion, no doubt, but still emotion—against the corroding consequences of scientific discovery. The choice presented to them they deem to be a choice between the true and the attractive. "Truth (they say) has a claim on our allegiance, supreme and indefeasible. Though knowledge in its remorseless progress tumbles all other ideals in the dust, still if it *be* knowledge, it must be reverently followed and patiently obeyed. We rate love and beauty no less highly than our neighbours. But if you tell us that their values can only be maintained by ignoring conclusions to which science points the way, our choice is made. Between these alternatives we shall never hesitate."

It would be wrong to say that to persons in this mood the argument makes no appeal. It appeals, though ineffectually. But there is a third class to whom it makes no appeal at all. It is not every man who troubles himself about the "emotional" values; and for those who do not, there can be no struggle between opposing ideals. So far as they are concerned the *argumentum ad hominem* is but an empty menace, involving in the case of dissent the surrender of nothing which they would seriously miss.

§ 2

Now these three examples show clearly how and why the *argumentum ad hominem*, if limited to the two first values, loses something of its effect. It touches a smaller audience. It lacks universality. It leaves unconvinced, though not perhaps unmoved, many of those who think that "positive" knowledge stands on a wholly different and far surer basis than beliefs of emotion; it leaves quite unmoved, as well as unconvinced, those to whom beliefs of emotion mean little or nothing.

Nor can this defect be removed except by removing its cause; and its cause can only be removed by showing that the values of knowledge are as dependent on a spiritual outlook as the values of beauty or of love. Were this task accomplished the desired universality would seemingly be attained. For in respect of common sense and science, all men should be interested, for all men are believers. The personal appeal, if valid at all, is valid for everyone. It may be answered, it may be ignored. But no man can treat it as irrelevant; for every deliberate action of his waking life is guided by beliefs which bring him within its scope.

§ 3

While the argument from the third of the great values is thus in a privileged position, I do not deny that the universality of its appeal is rather theoretical than practical. It is obviously neither possible nor desirable that the human race should sit solemnly down and consider how the truth—or at least the truthwardness—of its familiar beliefs can best be explained. Suitable though such a question may be to the situation of thinking beings like us, domiciled in a world like ours, few will be disposed to ask it, and still fewer will take the pains to understand any answer to it which is thought to be tainted with "metaphysic." Many persons, indeed, are interested in Theism, but not many are prepared to approach its consideration through the esoteric teaching of the schools. Outside Scotland, indeed, philosophers do not, I fear, stand high in popular esteem. They are supposed to question what nobody doubts, and to explain what everybody understands. Obscure thoughts couched in uncouth language, subtle argumentations which convince no one and lead nowhere, constitute (so it is believed) their principal stock-in-trade; and though traditions of culture may require them to be treated with some measure of respect, this is by no means inconsistent with the most perfect neglect of anything they may have to say. Before such an audience as this, philosophers (I am sure) require no defence. But it may perhaps be admitted that in face of prejudices like these (no doubt more often felt than expressed) it may be worth while to hazard some observations on the relation of philosophy to the general argument on which we are engaged.

§ 4

I have disowned any intention of propounding a system of my own ; I have no inclination to advocate the systems of other people ; and I am anxious, for reasons already indicated, to express my views, when they trespass on subjects usually reserved for philosophers, in language as little technical as possible. But how, it may be asked, is such an attitude to be justified ? If it be granted that the problems dealt with have a philosophic side, why (it may be said) in dealing with them should we thus keep philosophy at arm's length ? Those who discourse about the stars consult astronomers ; those who are troubled about their health consult physicians. This is not, I suppose, because they cherish the illusion that in these or any other subjects experts are infallible, but because they think that whether the advice of experts be good or bad, it is at least the best that can be obtained. Why not treat philosophers as we treat astronomers and doctors ? No one suggests that they are less able or less honest; why, then, act as if they were less competent?

This contention, however, plausible as it may seem, is based on a misconception. Philosophy is neither an art like medicine, nor a science like astronomy, nor a court of general appeal which the sciences are prepared to acknowledge. What, then, is it? And who are philosophers?

Perhaps we might reply that every man who consciously theorises about the universe at large may claim to be a philosopher; and that if his theories, as recorded by himself or his disciples, are fortunate enough to impress the world, they are entitled to count as a contribution to philosophy.[1] In this way, there has grown up a body or "canon" of the writings which are deemed to enshrine the philosophic thought which, from age to age, has seemed most worthy the attention of mankind. Its contents, I need hardly say, show no unity of purpose or fixity of outline. It has been written in many periods and from many points of view. It pretends to no sort of consistency. Yet, in spite of all, it shows a singular vitality, which seems yet more remarkable when we compare it with what has occurred in the parallel case of science. For the teaching of the great philosophers, though it appeals only to the few, seems rarely to be wholly superseded. It is never completely neglected, perhaps because it is never completely absorbed. Not so with the great discoverers. Men still consult Plato and Aristotle, Hume and Kant. But who goes for astronomy to Copernicus, or for chemistry to Boyle? These illustrious names stand in no peril of oblivion. They are imperishable milestones on the highway of knowledge. But new discoveries and new generalisations add so greatly to what they truly taught, and sweep their errors so rapidly into forgetfulness, that, unless by example, they have little now to teach us. In science, the last things are always the best, and the newest treatise is commonly the most instructive.

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[1] This is, of course, a very rough explanation of a word which is very loosely used. In particular the dividing line between philosophy and theology (where there is one) may be endlessly disputed. Let me add that throughout these lectures I have primarily in view only Western speculations and Western modes of thought.

§ 5

It would be almost as hazardous to make a similar statement about philosophy as to make it about literature—a fact which at first sight is sufficiently surprising. We might have supposed that out of the age-long disputes recorded in histories of philosophy there would gradually have emerged a body of doctrine, generally accepted, and well fitted to serve as a base of operations from which new adventures might be securely attempted. In science this has happened on an immense scale; but few will allege that it has happened in philosophy. The most, perhaps, that we can say is that some errors have been finally refuted, that some venerable theories have been disengaged from unessential blemishes; and that over some alluring paths "No thoroughfare" has been writ so large that even the boldest explorer must pause and turn.

This seems a poor result of six and twenty centuries of speculation; and so it certainly is, if we insist on applying to philosophy the standard we rightly apply to science. But this would be unjust. For it may be urged that if philosophy resembles science in that it strives to further systematic knowledge, it resembles literature in that it expresses not merely one aspect of the age which produced it, but the particular quality of individual genius. The teacher has value beyond his teaching. His personality retains its power when his arguments have sunk into senility. And thus it comes about that students will glean, and glean again, over philosophic fields long since harvested by their forerunners—seeking, and perhaps finding, inspiration from systems, not one characteristic doctrine of which they are prepared to accept in the form designed by its original author.

§ 6

These peculiarities make it very hard to measure the exact importance of the part that has been played by philosophy in the progress of mankind. Systems rise and fall. They have their day. As with art, as with letters, as with dress, favour largely goes by fashion : and for reasons not easy to disentangle, now one school of thought predominates, now another. But be they on the crest of the wave or in the trough, what influence have any of them exercised on the ordinary beliefs of ordinary men ? When they supply arguments that can be turned to account in some controversy of general interest, they are, of course, loudly, if not intelligently, welcomed by those who claim them as allies—for in this respect the battle-fields of philosophy do not differ from those of politics or war. But how far have they moulded and modified the general character of civilised thought? How far have they controlled general opinion? How far have they merely reflected it? How far have they been beside it or beyond it?

Philosophers, who differ about most things, differ even about the importance of philosophy. My own view (which I express with much diffidence) is that while on religion and ethics the speculations embodied in the philosophical canon have had an important influence, on the familiar beliefs which supply the raw material of these lectures, their effect has been negligible. Consider for a moment the case of science. Is there any evidence that they have modified in the smallest degree our beliefs about the world of Nature? Of some Greek speculations it is hard to say whether at their birth they should have been registered as science or as philosophy, for in fact they were both. But modern science, as far as I can see, owes philosophy nothing.[1] It is alleged that the illegitimate use of traditional philosophic categories, e.g. "substance" and "essence," the authority of such maxims as "cause and effect are equal" or "the effect ceases with the cessation of its cause," have, in some cases, retarded progress. But I am not sure that it is true, and if true it is little to the purpose. As late as Hegel, indeed, who, at an ill-chosen moment, determined the number of the planets by the laws of thought, philosophy has occasionally thrust itself into the domain of science; but such raids were never effective, have long been out of favour, and are never likely to be repeated. Some philosophers, like Aristotle in the ancient world, Descartes and Leibnitz in the modern, have greatly furthered scientific progress; but they did not do it as philosophers but as naturalists, mathematicians, and physicists. Bacon, the prophet of experimental and applied science, did much by his genius and his eloquence to put these subjects in a just perspective; but to scientific *knowledge* he added little. Philosophers like Hume have acquired fame by making critical attacks on the foundations of science; other philosophers, like Kant, have acquired fame by devising critical replics. But science—profoundly indifferent both to the attack and the defence—has throughout remained serenely unconscious that its fate, as judged by speculative reason, was hanging doubtfully in the balance!

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[1] See my observations on the atomic theory in "Theism and Humanism," p. 220.

This example is, I think, instructive. Hume's scepticism was famous in its day—and indeed is famous still. But by the unphilosophic public it was, and is, supposed to be levelled mainly against religion. As a matter of fact, this is not so. Science was theoretically in even greater peril than theology. But while theologians well knew that Hume had made use of arguments which it was their business to answer, it never occurred (so far as I know) to any men of science that *their* entrenchments also were under fire, and that it behoved them to strengthen their defences. They had a well-grounded confidence that, however open to attack science might seem to those who were playing a dialectical " war-game," in the world of practice it was certainly impregnable.

So it has come about that while philosophy has concerned itself more and more with the groundwork of scientific knowledge, science has neither returned the compliment nor followed the example. It takes little interest in its own first principles, and pays little attention to those who do. I am far from saying that its procedure is wrong; but I submit that it is interesting, and not without a moral to which I shall refer before the present course of lectures is brought to an end.

§ 7

Moreover, it must be observed that this indifference to philosophy on the part of science, though not often expressed in terms, is sincere and thorough. There is a species of indifference of quite another type, which is neither so reticent nor so genuine. A man who has glanced without comprehension at an article on electromagnetic theory may throw it aside exclaiming that this is a subject about which he neither knows anything nor wants to know anything. But he does not really mean by this that the article deals with matters which in no way concern him. On the contrary, he is probably well aware of their importance. What he means is that in a world where there is minute subdivision of labour and great diversity of gifts, it cannot be *his* particular business to master a branch of abstruse learning, for which he possesses neither aptitude nor inclination.

But unless I be greatly mistaken this is not in the least the attitude towards philosophic speculation adopted by most men of science. If, as sometimes happens, one of them is interested also in philosophy, it is not because he thinks that his philosophy is going to throw light on his science, but because he is concerned about problems with which philosophy *does* and science does *not* make some attempt to deal. If by mischance the two lines of investigation clashed, it would never occur to him that his science ought to give way, although in the order of logic his philosophy must surely be the more fundamental. This attitude may be right or wrong; but at least it is an indication that while science means much to philosophy, philosophy means little to science; and we may certainly add that if it means little to science, it means still less to ordinary men in the conduct of their ordinary affairs.

In these circumstances we need feel no surprise that while philosophy is, as we are all aware, somewhat prone to patronising religion, it very meekly takes its orders from science. I do not, of course, mean that science prescribes its methods, or controls its conclusions. I merely mean that when science speaks with a united voice, philosophy never ventures to contradict it. We live in a scientific age, and this attitude may seem as natural now as it would have seemed unnatural a few centuries ago. But whether natural or unnatural, it is surely very paradoxical. We have on the one side science uncritically based on uncriticised common sense, but triumphant, successful, united. On the other, we have philosophy profoundly divided against itself, conscious of a great mission, yet unable to agree how best to accomplish it. On the one side, we have science, barely aware that philosophy exists, and not aware at all that its conclusions have any scientific interest. On the other, we have philosophy, respectfully accepting all scientific conclusions, though sometimes not insensible to unsolved difficulties which science calmly ignores, or brushes contemptuously away. On the one side, we have science *de facto* lord of its own great province of belief; and on the other, philosophy *de jure* judge of all the knowable, striving to make good the title of its all-powerful vassal, but so far striving in vain!

If any think this picture overcharged, either as regards the subservience of philosophy to science in respect of its conclusions, or the logical dependence of science on philosophy in respect of its premises, or the failure of philosophers to agree on any theory of knowledge, or the total indifference of science as to whether they agree or not, let him compare the histories respectively of philosophy and science from the seventeenth century to the twentieth, and I venture to think that he will alter his opinion.

§ 8

These observations, however incomplete, may sufficiently explain why so large a proportion of educated persons treat philosophy as negligible. They derive their world view, when they have one, either from current science or current theology,[1] or both. The philosophic "canon," whether ancient or modern, to them means nothing, nor do they connect their familiar beliefs with any of the metaphysical systems which have from time to time found favour in the schools. Our position in these lectures is somewhat different. Like the rest of the world we accept the general body of familiar beliefs —scientific and other—but they constitute the beginning of our investigations, not the end. Our journey lies still before us, and in the course of it we shall sometimes have to touch on problems which the wisdom or the idleness of mankind has gladly left to philosophy. I regret the necessity; for I am well aware that I thus lay myself open to a double criticism. Philosophers will complain that I have engaged in controversies about which I should either have said nothing or have said more, while those who think all philosophic controversy futile or unintelligible will resent the attempt to force them into unaccustomed modes of thought. It is these last whom I most desire to reassure. I do not deny that the road which lies before us may appear somewhat less easy than that which we have already traversed. But this is not because it leads us far from common things into the heights of metaphysical speculation, but rather because even the foothills of philosophy may call for exertions of a kind which, though not intrinsically difficult, are a little unusual, and perhaps for that reason somewhat unattractive. I am, however, bold enough to hope that even the least accustomed traveller will, on a fair trial, find his journey neither so rough nor so tedious as he may be inclined to fear.

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[1] I do not, of course, mean to suggest that theology has been uninfluenced by philosophy. See above.

CHAPTER IV

METHODOLOGICAL DOUBT

§ 1

THE central theme, then, of these lectures being the values of our familiar beliefs, I have next to ask from what quarter this subject can most conveniently be approached. After due reflection it seems to me that I can hardly do better than take advantage of some observations on philosophical method by Mr. Bertrand Russell, who, about the time that I was last lecturing in the University of Glasgow, was similarly occupied in the University of Harvard. The result of his labours is contained in the important volume entitled " Our Knowledge of the External World," in which the collected addresses were made available to the general reader. But unfortunately, the year 1914, and the years which followed it, gave scant opportunity for philosophic study, and I had no opportunity of reading the book on its first appearance. This I greatly regret; for though it would not, I suppose, be easy to find two people who differed more widely in their conclusions, there are certain resemblances in our theories of philosophic method which seem sufficiently close to render discussion profitable. Mr. Russell may perhaps take a different view; and in any case it may be proper to observe that there are portions of his work, and those perhaps of the greatest general interest, with which I am only indirectly concerned—I mean his attack on Idealism and his advocacy of the New Logic. For Idealism he entertains the profoundest contempt, for the New Logic he entertains the most ardent admiration; and the two sentiments are most intimately connected, since it is to the defects of the old logic that the errors of idealism are in his judgment chiefly to be attributed.

I hold no brief for Idealism, and have no inclination to defend the old logic. It may be as tiresome, as pedantic, as trivial, as erroneous, as its severest critics believe; while the new logic may have all the merits in which the old is so lamentably deficient. On this subject at least Mr. Russell has no doubts. He speaks as an enthusiast. No reformer has ever drawn a blacker picture of the abuses he wished to destroy, or has painted in more glowing colours the millennium he proposed to establish. If the old logic has, in his view, rendered "most philosophers incapable of giving any account of the world of science and of daily life," the new logic, on the other hand, "enlarges our abstract imagination and provides an infinite number of possible hypotheses to be applied to the analysis of any complex fact." If "the old logic puts thought in fetters" the "new logic gives it wings." It will do for philosophy what Bacon hoped to do for all the sciences of Nature; what Galileo actually did for mechanics. And in anticipation of this intellectual millennium it already "clears away incredible accumulations of metaphysical lumber."

This is high praise; and I trust it is merited. But it is not in this connection that I feel myself in closest agreement with Mr. Russell—it is rather in connection with certain other aspects of his general plan of attack on the great problems of philosophy.

§ 2

In the first place, he is a convinced advocate of the practice which he well describes as "methodological doubt,"[1] especially if it be "genuine and prolonged." Whether he employs the method to the best advantage is another question. But for the method itself I have nothing but praise. I advocated it, and to the best of my ability practised it, more than forty years ago. I advocate it, and to the best of my ability practise it, still. I believe it to be sound.

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[1] "External World," p. 240.

Moreover, Mr. Russell, if I rightly understand him, means by it exactly, or almost exactly, what I mean by it; and his "methodological doubts" begin where, in my opinion, they ought to begin—with the common beliefs which all men share. These beliefs are, or should be, the primary concern of philosophy; they constitute the obvious material on which philosophic criticism should first be tried. Themes higher and more remote may wait their turn. They are not likely to be forgotten. Mr. Russell, therefore, does well to enquire whether other people exist; whether testimony be a valid source of information; whether, and in what sense, we should accept the law of causation; whether there is an independent material world; whether, if there be, it is of the kind required by science; how error is possible; how the contradictions involved in motion are to be solved; and other similar problems of which the solutions seem obvious till we attempt to find them.

This is criticism as it ought to be. To this ordeal all our leading beliefs should be submitted before they obtain right of entry into any philosophic creed.[1] Till it be passed they are (as he happily observes) " blind habits " rather than "intellectual convictions."[1] And though in an access of (what seems to me) unreasoning faith he entertains hopes that the majority of them will be ultimately saved, he is pretty sure that an important minority will perish by the way.

§ 3

So far, so good. But in the deliberate employment of " methodological doubt " there are two dangers which must never be forgotten. It may be used perversely, and it may be used inconsequently. In the first case, it will degenerate into mere " barren scepticism "; in the second, it may lose its critical edge, and thereby be deprived of all its philosophical efficiency. Mr. Russell seems most afraid of Scylla. I confess that to me Charybdis appears the greater peril.

The " barren sceptic " of ordinary discourse no doubt exists—the gentleman who surveys the world and finds therein nothing worth doing, nothing worth admiring, nothing worth loving, and nothing worth knowing. Scepticism of this type is but the pretentious expression of bored satiety, and is not of the slightest importance to anyone but the subject of it, and perhaps also to his immediate relations.

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[1] " External World," p. 239.

The " barren sceptic," to whom Mr. Russell " makes his bow "[1] with an air of slightly embarrassed politeness, is a gentleman of quite a different species. He appears, probably not for the first time, in the pages of Herbert Spencer's " Proof of Realism " : and he appears in order that he may there publicly suffer the utmost penalty of the law. But why Mr. Russell should bring him on the stage, or why his scepticism should be intrinsically more barren than Mr. Russell's own, I do not clearly understand. Is it because the " barren " sceptic questions the totality of knowledge, while the sceptic approved by Mr. Russell doubts only the elements of which that totality is composed ? " Philosophic scrutiny," he tells us, " though sceptical as regards every detail, is not sceptical as regards the whole." But why not ? Can it really be contended that we may be sceptical, as Mr. Russell himself is sceptical, about the reality of an independent material world, about the existence of other people, about the law of causation, about the relation born by each man's " private " spaces to Space in general, and each man's " private " times to Time in general, and yet not be sceptical about the " whole of common knowledge " ? Surely what would be left of the whole after all its more important parts had been subjected to this process of destructive distillation would be so trifling that it might be swallowed by the most fastidious of sceptics without ill consequence to his intellectual digestion.

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[1] " External World," p. 71.

§ 4

In any case, I venture to think that Mr. Russell would have been well advised to explain with somewhat greater precision the limitations, as he conceives them, of the sceptical method we both recommend. Judging merely by his practice, which I fancy is all we have to go by, there is here an important difference between us. I see no virtue in " methodological doubt " if we refuse to press it to its speculative limits. Though we need not, indeed cannot, accept these limits in the conduct of life, at least we should know whereabouts they lie. But how can we know this if we mitigate the method whenever it threatens our favourite beliefs? Of this weakness Mr. Russell appears to me to be frequently guilty. I can find no trace of consistency in his practice. Sometimes he is particular almost to excess in the matter of proof. Euclid's easy credulity, his slipshod demonstrations, his rash assumptions, too long hidden from the uninitiated by the incompetence of mathematical experts, fill him with displeasure. He is severe to the verge of harshness in his judgment on those whom he describes as "mystic idealists." "Belief in the unreality of the world of sense," with which he credits them, "arises with irresistible force in certain moods," which have (as he imagines) "some simple physiological basis, but are none the less powerfully persuasive."[1] When the "emotional intensity of such a mood subsides there begins the search for logical reasons," and since the belief already exists, any reasons that present themselves are hospitably entertained. "The logic which thus arises is not (he thinks) quite disinterested or candid."[2]

Euclid's deplorable shortcomings are no affair of mine; nor for the matter of that is "mystical idealism." But does not this passage, whether it be considered in itself, or be compared with other passages in which he deals with science and common sense, throw a very singular light on Mr. Russell's use of his own chosen method ?

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[1] "External World," p. 45.

[2] This is partly quoted, partly summarised.

It is evident that, in his view, a " simple physiological basis " provides no very creditable origin for the moods which give birth to belief. But have his own beliefs any pedigree more distinguished ? Is there a single one of them which does not count among its sources some (more or less) " simple physiological basis " ? We are here, of course, again brought back to the problem so often referred to in these lectures—the problem due to the distinction which has to be drawn between the causes of belief and its reasons. Mr. Russell is alive, it seems, to the importance of the distinction when it affects metaphysics ; but I do not notice any reference to it when he is dealing with physics ; though physics, for reasons which will subsequently appear, is perhaps in the more perilous position of the two.

§ 5

This, however, is not the point on which, for the moment, I desire to insist. I am now concerned with the unequal treatment which Mr. Russell metes out to various classes of belief;—for this touches the very essence of sceptical methodology.

I am not suggesting, be it observed, that we need be equally interested in all branches of knowledge. I am not concerned to weigh the comparative importance of physics and metaphysics. Above all, I am not trying to establish one set of beliefs by throwing doubt upon another. I think, and have always thought, that as we guide our lives by the help of a rough working creed concerning the world of men and things, it is with a critical study of this that philosophy should begin. I agree therefore with Mr. Russell in the view that we may accept the "mass of common knowledge as affording data for our philosophical analysis"[1]; and for myself I should be prepared to say "ought" instead of saying "may." I also agree that "we do not, as practical men, entertain for a moment the hypothesis that the whole edifice (of common knowledge) may be built on insecure foundations,"[1] provided that emphasis be laid on the word "practical," and provided that beliefs may be treated as "practically" secure while they are still admitted to be speculatively doubtful. Such, of course, is my conviction. We all live by faith;

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[1] "External World," p. 66.

our inevitable beliefs far outrun any reasons which we have as yet been able to find for them. Until this state of things can be remedied by philosophy (and Mr. Russell's estimate of the potentialities of the New Logic may give us hope), we must be content to adopt a provisional point of view. But the fact that so much of our practical life at present rests on unreasoned foundations is one of which every system, be it provisional or be it final, is bound to take account.

I am not, indeed, quite sure that Mr. Russell would agree. His language seems to me ambiguous, his attitude to be wavering; and I attribute both the ambiguity and the indecision to his hesitating use of his own method. He talks, for example, of "scientific facts the best established and the most worthy of belief."[1] He tells us that "whatever there is reason to believe in physics can probably be interpreted in terms of sense." He holds that the "data" (of common knowledge) "somehow command our assent, and in some interpretations *are pretty certainly true.*" Surely his cross-examination becomes strangely gentle when he happens to like the witness!

Of course, if he only means that when we are discoursing on the level of ordinary practice we must assume the truth of ordinary beliefs we need not quarrel with him. But what value have ordinary beliefs on the level of "methodological doubt"? On that level we are bound to ask how these scientific facts have been established, and why they are "worthy of belief"? We must be told on what grounds it is asserted that "the truths of physics can be interpreted in terms of sense"; and why we should suppose "that the 'data' of common knowledge," which "somehow command our assent, are pretty certainly true"? What is the distinction between this naïve faith and the blind reliance "upon interesting intuitions"[1] which, in the case of the "mystical idealists," Mr. Russell so severely condemns? Regarded from the strictly rational point of view there seems little to choose between them; and if it be true, as Mr. Russell asserts, that the latter has produced a logic which is "not quite disinterested or candid," what sort of logic has been produced by the former?

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[1] "External World," p. 46.

Not one which at first sight seems more satisfactory. For it is not the "mystical idealist" alone who reaches his beliefs through his intuitions.[1] This, according to Mr. Russell, is the common lot. It is true that the intuitions of the mystical idealist are described as "interesting," and his reliance upon them is said to be "blind"; while no such epithets are applied to the intuitions of ordinary folk. But, after all, to be interesting is no great crime, and all intuition must surely be "blind," *if* by blind is meant, as in this connection I suppose it is, independent of discursive reason.

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[1] "External World," p. 21.

So far, then, as this part of Mr. Russell's teaching is concerned, it would seem that our beliefs are originally drawn from our intuitions; that our intuitions are sometimes good and sometimes bad; but that no suggestions are forthcoming as to how the bad are to be distinguished from the good. This can hardly be satisfactory to any logician; yet so little does it discourage Mr. Russell that he definitely declares (1) that the knowledge thus acquired must, in the main, "be accepted if philosophy is to be possible at all"; (2) that "the canons" (so far as I am aware, as yet uncatalogued and unexplained) "by which it has been reached must be assumed"; and (3) that its "errors must be discoverable and corrigible by the very methods" which have brought it into existence.

Considering that the methods which have brought it into existence seem largely to consist of inconclusive reasonings based on uncertain intuitions, these statements sound passing strange; and they sound stranger still when we remember that the logician who makes them is an uncompromising advocate of "methodological doubt," that he desires to submit all our "naïve beliefs" to the "sceptical test"[1] before "admitting them into philosophy," and that "until they pass this ordeal" they are to be counted as "blind habits" rather than "intellectual convictions."[1] I find it difficult, with the best will in the world, to combine these apparently divergent views into one harmonious whole. For a philosopher whose list of the things "we must do our best to doubt" includes the "senses, reason, morals, everything," the number of things he succeeds in believing seems surprisingly large; and though the "desire to discover evidence for agreeable results" has, in his view, "been the chief obstacle to honest philosophising," it does not seem to be an obstacle which, in his own case, he has taken the least trouble to surmount.

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[1] "External World," p. 239.

§ 6

I hasten to add that, speaking for myself, I do not regard the desire to find good reasons for a foregone conclusion as necessarily either a blunder or a crime; and if it be, Mr. Russell has certainly sinned in the very best of philosophic company. It is, I think, perfectly clear, as a matter of historic fact, that the great system builders have always been moved by the desire to find honourable accommodation in their philosophic constructions for the opinions which, by temperament or training, they were already inclined to adopt. I say nothing here of the schoolmen whose works are sometimes treated by critics as negligible on the very insufficient ground that their conclusions were fore-ordained by authority. But consider the case of philosophers who are certainly free from this reproach. Is it not obvious that Schopenhauer's metaphysic was due to his pessimism, and not his pessimism to his metaphysic? Does any man imagine that if Hegel had not been resolved to identify thought and reality he would have been convinced by his own dialectic? If Mill had not been already of opinion that science, as he knew it, was satisfactorily based on experience, as he understood it, would he have developed his theory of induction with the facile complacency that marks and mars his logic?

But consider a yet more famous example to which, in another connection, I have already referred. The first occasion of Kant's critical labours was notoriously the scepticism of Hume. It was to defeat this that he devised the ponderous and complicated machinery of the first Critique. What he sought for, and what he believed himself to have discovered, was some sure ground for that knowledge of "phenomena" without which science would be impossible. He thought, truly enough, that this ground as surveyed by previous philosophers was mined by the Scottish sceptic; and, in the most elaborate fashion, he proceeded to countermine. Quite right—but then what becomes of the "honest philosophising" which shuns the temptation of "desired conclusions"? Are the conclusions of science not among them?

The same question may, in my opinion, be asked about other parts of the Kantian system. I do not wish to argue the point—for in the year 1922 it is a matter of secondary importance to determine exactly what Kant thought in the year 1782. But I would ask those who are inclined to dispute my view whether the whole scheme of the Critical Philosophy is not obviously devised by its author to meet the special needs of the age in which he lived? I spoke just now of the desire entertained by the great system makers to find "honourable accommodation" for the opinions which they favoured. The opinions favoured by Kant were eighteenth century physics, eighteenth century deism, and eighteenth century ethics. For each of these he added a wing to his philosophic palace; and, though the resulting edifice is imposing, there is surely some incongruity in the styles employed, and little that is permanent in the result achieved. So at least it seems to me.

One more illustration I may take from a philosopher of a very different type. If ever there was a system unwarped by the wish to find support for "agreeable results," it is surely the Ethics of Spinoza. The austere intellectualism of his scheme, the remorseless march of his argument, crushing without apology or regret the hopes and beliefs of ordinary men, all seem to indicate a desire on the part of its author to produce a philosophy uncontaminated by emotions, and unswayed by theological preferences.

Yet such a judgment would (I suppose)

imply a very erroneous estimate of this "God-intoxicated" man. Though his pantheism has greatly moved both metaphysicians and poets, it is, I suspect, rather by its imaginative than by its intellectual appeal. His demonstrations carry no conviction, with all his reasoning he rarely satisfies the reason, and, strangest paradox of all, it is by a quasi-religious fervour that, apart from personal character, he chiefly compels our regard. For myself, I can admire, but I cannot sympathise. Substance, which for him is God, and God, which for him is Nature, possessing no personality and permitting no freedom, is a fitting subject for study, but surely not for love. And when Spinoza lavishes upon this metaphysical entity every epithet of religious devotion, it is to me as when a child showers endearment upon the doll which she has tenderly adorned, yet leaves it, as she found it, a loveless and lifeless machine.

§ 7

My purpose, however, is not to criticise this singular genius, but to show once more how hardly constructive philosophy—be it that of Mr. Bertrand Russell or of anyone else—succeeds in consistently adhering to a purely intellectual rôle. There is indeed an influential school which, if I rightly understand its teaching, would explicitly deny, not merely that constructive philosophy can perform this feat, but that it ought to make the attempt. They point out that in fact we start, and always must start, with untested assumptions; that, in the slow developments of knowledge, will and purpose play as great a part as reflective reason; that desire is the spur to all speculative adventure; and that thought cannot be divorced from action. From facts like these they argue that a purely intellectualist philosophy must be both narrow and false; that it ignores the verities of human life, and in so doing becomes irrational from too jealous a devotion to pure reason, unreal from too exclusive a pursuit of essential reality.

Now there is much in this train of thought with which I needs must sympathise. Since my constant theme is the non-rational strain in the pedigree of our strongest beliefs, I cannot but look with favour on speculations which bring certain aspects of this truth into so clear a light. Yet while I accept (speaking very broadly) the psychological premises, I cannot accept in full the philosophic conclusion. This pragmatic view leaves me as little satisfied as the opposite doctrine preached, if not always practised, by Mr. Bertrand Russell. Yet there is truth to be found in both views. I agree with the pragmatists in refusing to require philosophers to approach their task in a mood of complete emotional neutrality, prepared to follow all lines of research with an equal zest, and to welcome all conclusions with an equal warmth. I admit that this is not the way things do happen or can happen. Since philosophers are human, there must always be something human even in their methods of pursuing truth; and we should gravely err if we treated the student groping after the Absolute as belonging to a wholly different species from the hunter of big game or the prospector of gold-mines.

Nevertheless, Mr. Russell is surely right in thinking that the desire for particular conclusions, be they theological, scientific, mystical, metaphysical, what you will, has often made philosophers strangely tolerant of very inconclusive reasoning. We need not put it quite as unkindly as he does; we need charge no man's logic with lack of "candour." Yet we may be permitted to note how slender is the foundation on which many imposing philosophic constructions have been reared, and how amazing is the confidence with which their respective architects have certified to their solidity.

But this does not mean that we are debarred from endeavouring rationally to establish desired conclusions, but only that we should not sophisticate reason in the process. Hopes and fears, preferences, and even prejudices, may be tolerable, and perhaps useful, elements among the complex motives which urge men to undertake the labours of speculative enquiry. I do not myself deny (though there are some who do) that pure curiosity, the wish to know for the mere delight of knowing, may be a most powerful motive, nor that it may exist without the least desire to turn the knowledge to account for any ulterior purposes whatever, personal or social, secular or religious. It may thrive unsupported by self-interest; it may be utterly indifferent both to the "glory of God" and the "relief of man's estate."[1] It may be completely self-sufficing. Yet those are surely not in error who deem it impossible, and if possible very impolitic, to ban all motive for study but the abstract desire for truth "in general." There are other values to be considered besides rational values. We may, without reproach, incline to certain conclusions before we have reached any clear notion of how they are to be established. I therefore regard Mr. Russell as perfectly within his right when he takes science, and even common sense, under his philosophic patronage. In this matter I share his prepossessions, though I shall strive in what follows to avoid his partiality.

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[1] Lord Bacon.

CHAPTER V

OUR FAMILIAR CREED

§ 1

LET us agree, then, to apply the instrument of "methodological doubt" to what Mr. Russell calls the "mass of common knowledge"; and let us agree to apply it without fear and without favour. But if this is to be our procedure, it will certainly prove convenient to boil down this general "mass" for the purposes of our experiment into a sort of informal creed, compounded out of the beliefs or classes of belief ordinarily entertained by ordinary people in their ordinary moments. There is no question here of attempting anything in the nature of an all-inclusive survey, however bare and abstract, of what men suppose themselves to know. This may, or may not, be worth attempting; in any case, it is not what I attempt. It will be enough for my purpose if the beliefs, or kinds of belief, I informally enumerate, are in themselves of decisive importance, are generally held, and are easily described. Convenience suggests that we should restrict our list to beliefs which, in some shape or other, are generally entertained by science and worldly good sense. Religion, metaphysics, morality, and æsthetics may, for the moment, be left on one side. It is true that these subjects have always lent themselves with peculiar facility to experiments in doubting—but, perhaps for that very reason, the doubts they suggest are much less likely to be instructive. Areas assigned by custom to military manœuvres are rarely the theatre of decisive battles.

I propose, then, as a preliminary stage in the application of methodological doubt, to sketch a creed which shall embody certain of our familiar beliefs. But before making the attempt let me apologise for my use of the word. It is in many respects very inappropriate. A creed—be it religious, political, artistic, ethical, what you will—is usually intended to be more than a list of true propositions; it has about it some element of challenge; it is designed to separate sharply those who accept it from those who do not; it proposes to fix or stabilise beliefs on some particular subject; it is at once a device for producing conformity and for putting conformity to the test. My unpretentious list of familiar beliefs aims at none of these things. It is in intention quite uncontroversial; and could I have described it by a better word than "creed" I should certainly have done so. No better word has, however, occurred to me. Mr. Russell's "mass of common knowledge" expresses the idea, and I employ it or its equivalent when I can. But he did not devise the phrase for technical purposes; and for these it is too heavy and too long. So, bearing this explanation and apology in mind, the reader will, I hope, permit me to use the word "creed" in the loose and informal manner I have endeavoured to indicate.

§ 2

My description, then, of "the mass of common knowledge," my creed of familiar beliefs, runs somewhat as follows:

Every man regards himself as a living being among other living beings. Especially does he think of himself as a man among men, one of a multitude of similar beings who know, feel, desire, will, and act; beings between whom intercommunication of some kind not only occurs but seems necessary to normal existence.

Every man thinks of himself and his fellows as dwellers in a world of material things, a world in space and time, a world extended and enduring. Every man believes himself to possess, under normal conditions, the power of intentionally moving some of these material things, and, among other material things, his own body. He attributes the same power to other men and to many animals. He does not, however, suppose that its exercise—all-important though it be to those concerned—seriously modifies the vast material bulk of the surrounding world. This runs its independent course, scarcely touched by living activities, and quite unmoved by the thoughts, perceptions, and desires of the human race.

Every man attributes to this natural world a large measure of regularity, and most of the persons who are likely to read these words conceive that, apart from life and will (about which there are disputes), its regularity is unbroken.[1] With a complete knowledge, therefore, of the present constitution of Nature and adequate powers of calculation, we could perfectly anticipate the future of the physical universe to the end of time—unless, indeed, its course were modified by influences which are not physical. Though still infinitely remote from such a consummation, most educated moderns cherish the hope that we are moving slowly towards it; and, in the meanwhile, beliefs in the laws, or at least the habits, of Nature constitute a most important part of our common-sense equipment.

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[1] On this subject cf. "Theism and Humanism," ch. viii.

The beliefs so far enumerated are of wide scope and great generality. But to complete our sketch four other classes of belief require to be mentioned.

1. Certain abstract principles—e.g. those called logical and mathematical—which we regard as true not merely of the world in which we live, but of any world in which we find it possible to believe.
2. A large stock of minor generalisations.
3. Innumerable beliefs about particular matters of fact—some dealing with objects and events of enduring interest, others apparently referring only to the transitory and the trivial.
4. A belief that some access to truths—particular and general—is provided through such channels as perception, memory, reasoning, intuition, and human testimony.

It is important to observe that whenever the creed deals with the classes of belief numbered (2) and (3), the unanimity claimed for it is of a special type. All the world is agreed to accept some members of these classes, but there is no agreement as to what those members should be. Everybody, for example, owns a private collection of beliefs about particular matters of fact, perceived, remembered, inferred, or taken on trust. But no two people own precisely the same collection, or have gathered it together precisely in the same way. Their respective creeds, therefore, could we imagine them set out in full, would have many common characteristics, but they would never be identical; nor would they be due to the same memories, the same perceptions, the same reasoning, or the same hearsay.

If any critic cares to observe that this list of platitudes is wholly deficient in inner logic or external completeness, I shall entirely agree. It aims, after all, at no more ambitious object than to summarise, in a very general fashion, some important portions of our "mass of common knowledge," and this I think it does. So far as I at least am concerned, it indicates in language sufficiently intelligible the beliefs and kinds of belief which I ordinarily entertain about the world of men and things in which I suppose myself to live. If it does the same for any of my readers, with them I can talk, and in their company I can proceed to make such inquiries about it as "methodological doubt" may properly suggest.

§ 3

In this investigation our point of departure is clear, and may be expressed in a simple question—"We have a creed; why *ought* we to believe it?" Let it be noted that this question must be sharply distinguished from another with which it is sometimes confounded—namely, "We have a creed; how came we to believe it?" The two problems may be closely related, but they are quite different, and even when treated together should never be confounded. The first, the one with which we are immediately concerned, is a problem for reflective reason. It is in the strictest sense philosophical. The second, on the other hand, is a problem for psychology, heredity, social history, and personal biography. It may conveniently be called scientific. During the course of our investigations we shall have to travel to and fro between the two; but we should never do so unwittingly, nor should we, on one level of thought, discourse in a manner appropriate only to the other.

For the moment we are on the philosophic level; and the question which I put a moment ago immediately suggests another. If we want a rational justification for our creed, should we not first consider what kind of reasons would satisfy us were we happy enough to find them? Since we are in general agreement about the sort of things we believe, can we not reach some general agreement about the sort of grounds on which we can reasonably believe them? This may seem a desire impossible of fulfilment; for why should philosophers, who differ about everything else, come to terms about this? Yet the problem is a narrow one; its solution does not involve the construction of a philosophy, but only the clarifying of our ideas as to the sort of philosophy we should like to have if we could get it. And even this statement goes too far, since the philosophy of which, for the moment, we are in search does not aim at satisfying all our aspirations. It has no celestial ambition, it never soars into the infinite; it modestly limits itself to the familiar commonplaces of daily life which some of the greatest masters of speculation have deemed far beneath their notice.

To what pattern, then, should a satisfactory "philosophy of the familiar" conform? Let us make a trial of some which naturally present themselves. Can we accept, for instance, a scheme which would treat all the various elements of our creed as truths which are independent of proof and severally proclaim themselves as self-sufficient ? Evidently not. That "Julius Cæsar is dead" (for example) or that "energy is conserved"—characteristic examples of historic and scientific beliefs—are plainly not self-evident propositions. They may be true, but their truth must be established. If this be admitted the idea that our creed is a collection of beliefs, all axiomatic and each independent of the others, need not be further pursued.

Let us, then, consider a second alternative. Let us suppose that not one of our beliefs considered separately has any validity of its own, but that all of them considered together form a rational and self-sufficient whole. This theory has at first sight a strong resemblance to the views on truth and reality entertained by some absolute idealists. For them also the parts considered separately are mere appearance. Only the Whole is real; only the Whole is self-consistent. But it must be observed that their Whole, if it exists at all, is a true Whole—individual, complete, all-inclusive; not to be increased by addition nor diminished by subtraction. Judged by this standard the mass of common knowledge never reaches the dignity of a Whole. So far from being all-inclusive, it is admittedly no more than an oasis of knowledge in an unmapped desert of ignorance. So far from being insusceptible of change, it changes every day. Moreover, if our belief in the parts ought properly to depend on our belief in the whole, until we know the whole our belief in the parts should remain in suspense. No half-way house seems possible between perfect omniscience and total ignorance. We know all, or we know naught; and since neither of these alternatives is tolerable we are, on this hypothesis, straightway reduced to speculative impotence.

It is then to some third pattern that the beliefs or classes of belief which constitute common knowledge should be capable of conforming, and surely the third pattern must require that the validity of the system be rooted in the validity of its fundamental portions; and that from these, by some rational process, the derivative portions must somehow be inferred. Under this scheme the elements of our creed would differ widely in their logical quality or status. Some might fitly serve as foundations; others must belong to the superstructure. Some would be ultimate, others derivative. In short, if the body of our common knowledge is to stand secure without transcendental support, its ultimate elements must be certain in their own right, and the connection between them and its derivative elements must conform to the canons of a sound logic.

§ 4

Here, then, in barest outline, is the "idea of a philosophy of familiar knowledge." But before considering how far the idea has been, or can be, made actual, let us endeavour to develop it somewhat more in detail; let us, in particular, enquire what sort of connection between the derivative and the ultimate elements of our creed we should regard as reasonable, and what characteristics the ultimate elements must themselves possess if they are to give this reasonable support to the derivative. In my endeavour to deal with both these points I am again fortunate enough to be able to quote the authority of Mr. Bertrand Russell; for in the Harvard Lectures already referred to he comments on various kinds of belief and certain problems of inference in a manner which I must needs approve—so closely does it conform to the line I have myself on various occasions endeavoured to follow. In this connection, therefore, I shall draw without scruple upon his writings, and, sometimes, even upon my own.

If, then, we reflect on the first of the two questions I have just asked, if, that is to say, we enquire how those of our beliefs which, on reflection, we acknowledge to be inferred can be legitimately derived from those which, on reflection, we acknowledge to be ultimate, we find ourselves obliged to recognise four principles in the theory of knowledge on which Mr. Bertrand Russell and I seem to be in complete agreement. He holds, in the *first* place, that "in all inference, form alone is essential,"[1] or, as I put it,[2] "that every kind of logic, if it is to be philosophical, must be formal," and that if "of two inferences which have the same form one is false and the other is true, the classification which connects them is philosophically worthless."[3] In the *second* place, we agree in thinking that no one has ever discovered any method by which formal inference is possible from particular judgments

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[1] "External World," p. 44.
[2] "Philosophic Doubt," p. 11.
[3] "Philosophic Doubt," p. 10.

alone. In the *third* place, we both hold that all experience is experience of particulars, and can only be embodied in particular judgments; from which, in the *fourth* place, we conclude that particular experiences must be associated with general judgments before they can become fertile; so that in the logical pedigree of every derivative belief we ought to find some general proposition, which is not itself an inference. From these four principles taken together it evidently follows that particular experiences alone can supply no knowledge beyond themselves, and that pure empiricism is a dream.

It is true that Mr. Russell somewhat narrows the broad conclusion at which, by the same route, we both seem to have arrived, since he would limit this unfavourable verdict to what he calls the older empiricism—by which he means the empiricism of John Mill. But if empiricism means, as it surely ought to mean, philosophy based in the last resort solely on experiences, no such limitation is permissible. Every form which this philosophy can assume, call it old or call it new, stands equally condemned. For in strictness an empiricism which requires the support of principles which cannot be established by experience is empiricism no longer, and should appeal to us for approval under some other name. I admit, however, that philosophic practice has made it very inconvenient to apply this canon with too rigid a precision; nor do I propose to do so.

§ 5

These conclusions depend on abstract considerations, which to some may seem difficult and to others paradoxical. They are certainly inconsistent with any respect for the pure theory of induction; and dispose completely of the notion that by mere experiment and observation it is possible to establish all, or indeed any, general knowledge on a basis satisfactory to reason. Yet it is not this speculative conclusion which will most repel the ordinary reader. He will rather feel that all this talk about beliefs which are ultimate and beliefs which are derivative, about general principles and particular observations, is not only extremely tiresome but has no real relevance to the subject we are nominally discussing. "What" (he will ask) "have these logical subtleties to do with what you are pleased to call my 'creed'? Many of its most important clauses describe beliefs which I began to hold in the nursery. I learnt that I was a 'dweller in a world of material things' when I tried to swallow my grandfather's watch. I was convinced that I was 'a living being among other living beings' when my elder brother knocked me down. I never doubted the regularity of a universe in which day and night, waking, eating, and sleeping followed each other with unbroken uniformity. As for the 'innumerable beliefs about particular matters of fact,' with some of which you truly say that all men are provided, I freely admit that my personal stock has been picked up from the people with whom I work, the newspapers I happen to read, and the gossip of my neighbours, supplemented of course by reminiscences of what I learned at school, or have observed in my passage through the world. If you are tactless enough to ask me why in the last resort I believe all these things or any of them, I may perhaps be embarrassed for a reply; but, under no circumstances, shall I go hunting after what you call the 'fundamental elements' in my 'creed,' or split hairs over the methods by which the 'derivative elements' in it may be legitimately inferred. Being only one of those ordinary men whose ordinary beliefs you condescend to discuss, I may be permitted to think that I have something better to do."

Much of this is very sensible, and though petulantly expressed, is in substance well worth saying. At least it has the merit of bringing into high relief the fact that while our creed may quite possibly be reasonable, it is only in very small measure the product of explicit reasoning; that we occupy only as squatters our little clearing in the Unknown; and that if a legal title be desirable it still remains to be acquired. These are points we may ponder over with advantage, and properly understood they afford an additional incentive to the further pursuit of that "idea of a philosophy of the familiar" on which we are engaged.

§ 6

What has been already said should suffice, I think, to convince us that if this philosophy is to satisfy our critical ideal it must not only proceed by valid inferences from assured premises, but that among these premises certain types of belief must be represented. They must, in the first place, include particular beliefs of experience—for otherwise they would be out of all relation to a creed which, though not purely empirical, yet leans on experience at every step; and, in the second place, they must include one or more general beliefs, for otherwise the creed could never be developed into a rational system.

Do our premises answer to this description? Have we got self-evident general beliefs? Have we got indubitable particular experiences? Or, in default of these, have we got beliefs possessing a sufficient measure of intuitive probability?[1]

I share the common opinion that we have. But have we them in sufficient number to meet the requirements of our creed? This is another question, and one which cannot, I think, be solved without a survey of some speculative problems which have perhaps been too little considered by the great schools of philosophy.

Let me begin with one of the most important. I have just mentioned "self-evident beliefs and indubitable experiences." To whom must they be self-evident? who in the last resort must regard them as indubitable? For the essential purposes of speculative reflection it must evidently be the individual who is speculating, and he alone. It must be you, or me, or some other person engaged in justifying to himself or others his own stock of "common knowledge." For such a person the fact that some one else entertains a belief can never supply a final reason for entertaining it himself. I am not, of course, questioning the leading part which human testimony and social influence play in the formation of opinions. It can hardly be exaggerated. My contention is that *even when testimony and influence are most* powerful as causes, as reasons they are never self-sufficing. Always they require further support, always they lean on something which is not merely testimony and not merely influence, always that something must be a belief of one's own. If, therefore, we press our enquiries to their limit they land us at last in unqualified individualism.

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[1] On intuitive probability, see Appendix.

And this, in itself, need cause us no uneasiness. There is no better security for truth than self-evidence, and where it exists and when it survives reflective criticism it can hardly be strengthened by authority. I, for example, am pretty sure that you hold, as I hold, that two things which, under like conditions, are equal to a third thing, are equal to each other. But though you may share my assurance, you cannot add to it. I am more confident that the axiom is true than that you believe it to be true. Indeed, I am more confident that the axiom is true than that you exist.

Even were it otherwise, your concurrence (itself, be it noted, known only by inference) provides but a weak and doubtful argument in favour of that which, so far as I am concerned, requires no argument at all. It already possesses, for me, the kind of inherent certainty for which I look. *I know not how to ask for more; and you, with the best will in the world,* are not in a position to give me as much.

So far, then, each one of us may put to his credit a certain number of axiomatic general judgments. Does each one of us also possess a number of indubitable particular experiences? With qualifications to be dealt with later, I think he does; but I do not think he does it to the extent which, at first sight, we might feel inclined to suppose. We must remember that what I have just said about individualism in the philosophy of knowledge applies as much to single experiences as to general truths. Indeed, it applies much more, or at least much more obviously. An axiom may not be better qualified to serve as one of the foundation-stones of my creed because apparently it is believed in by all the world. But at least it derives a certain dignity from its universality. My experiences, on the other hand, are essentially particular and essentially my own. They are never exactly similar in two individuals; and even if they were, they would never be exactly identical. Mine are always mine, as yours are always yours. And what is yet more important for the present purpose, your experiences can never do for my philosophy what they do for yours—they can never provide me with ultimate beliefs. They reach me only through your testimony; and since (as I have already pointed out) the trustworthiness of testimony is always a matter of inference, no experiences believed on testimony alone can be regarded as fundamental.

§ 7

It must be owned that these considerations limit in the most embarrassing way the basis of our beliefs. The statement that "thou" and "I" can only build on the narrow platform provided for "thee" and "me" by the experiences and principles which we severally regard as inherently self-sufficient is one at which we instinctively "boggle." We habitually assume that, in a certain measure, we are the heirs of all mankind; that human experience has been largely pooled; that every person born into the world may draw with equal right from the common stock. And so (with all due qualifications) he may, *if our familiar creed be true.* Concede this, and our difficulties disappear. But, then, this is the very thing we want to prove; and as I have with perhaps undue insistence endeavoured to show, we cannot prove it without (among other things) a sufficient supply of premises, which *to the individual thinker* seem self-sufficing. Is this supply forthcoming for you and for me? If not, the "philosophy of the familiar," as I have conceived it, seems, at least for us, to be in a somewhat perilous position.

The point will perhaps be clearer if I illustrate the difficulty by a concrete example: and my concrete example shall be the law of causation, on which depends, according to most philosophers, the scientific interpretation of (at least) the physical world. This great generalisation cannot rank with mathematical or other axioms. It is not self-evident, as self-evidence is ordinarily conceived; nor does the Kantian attempt[1] to treat it as transcendentally involved in the "experience of succession" receive, or, in my opinion, deserve, much modern support. Moreover, there are, as we have already seen, overwhelming logical difficulties involved in the endeavour to establish this or any other general principle by the mere accumulation of favourable instances, however overwhelming that accumulation may be.[1] What I have now to insist on is that the accumulation of favourable instances at *my* disposal or at *yours* is far indeed from being overwhelming. It is true that empirical philosophers most confidently remind us that the law of causation is based on observations extending through all recorded time. But they have omitted to notice that unless we first believe in the law, we can have little reason for believing in the observations. The fact that mankind have been observing, or for the matter of that doing anything else, for hundreds or thousands of years, can never be known by direct acquaintance. Inference is always involved. And turn the problem round as we will, we shall always find that one root of this inference is the belief in the regularity of Nature—the very conclusion we desire to establish.

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[1] Cf. "Philosophic Doubt," p. 124.

§ 8

The precise character of the individualist difficulty dealt with in the last section may, perhaps, be most clearly indicated if it is put in the form of such a question as the following:—How can I, on the narrow platform of my purely personal experiences, howsoever supplemented by logical and other trustworthy principles, erect the complex fabric of my creed? How can I, from premises so meagre, reasonably infer all that I insist on believing? How can I, aided only by these poor instruments of investigation, make any effective survey of a world with which my points of contact would seem to be so few, so transitory, and so uncertain?

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[1] Cf. "Philosophic Doubt," p. 71, from which much of what follows is a quotation.

It will be observed that this question throws no doubts upon the verities of reason or the trustworthiness of experience. It only assumes that for me the reason must be my reason, and the experience my experience; it only asks whether, if this be all I have to go upon, it is sufficient; and if it be not sufficient, how it is to be supplemented.

This is methodological doubt; and it has little relation to the labours of that "barren rascal" the professional sceptic, who is supposed to destroy his own philosophy by doubting his own doubts. Nevertheless there are philosophic circles where it is not always well looked upon. Some transcendental idealists, for instance, have nothing but hard words for those who suppose that in philosophy it is either necessary or legitimate for any man to depend in the last resort upon his own reason or his own experience. This, in their view, is mere "subjectivism"—useless and worse than useless for those who aspire to "objective" knowledge. Even if they hold that experience involves a "conscious centre" which experiences, they are prepared to anathematise anyone hardy enough to identify this "experiencing centre" with any historic individual who feels and thinks, who believes and doubts, who learns and who forgets. To encourage individualism like this is, in their opinion, to ruin philosophy; and it is British philosophers who, in this connection, have unwittingly proved themselves the worst and most obstinate offenders.

Now it is fortunately unnecessary for me to deal elaborately with this formidable controversy. I content myself with pointing out that I, and those (if any) who are of my way of thinking, dwell in regions so remote from these speculative heights as to be safe from attack by those who occupy them. Our ambitions are modest. We only want to know, each for himself, why certain beliefs, which (it seems) are common to us all, should be treated as true. Such a desire does not, at first sight, seem either foolish or perverse. But, in any case, it is ours. Let those who do not share it trouble us no further about the matter. But do not let them cherish the illusion that they can solve the sort of difficulty we feel by requiring us to assume as our *point of departure* "Thought" in general—thought which is not my thought, or their thought, or the thought of any individual thinker. This may turn out to be good ontology; it may provide a satisfactory account of Reality. I am far from denying that the universe may be essentially spiritual; that the essence of spirit may be Thought, and that in the unity of this transcendental Thought all minor distinctions, such as those which divide you from me, and both of us from the Absolute, may somehow be dissolved without being destroyed. But unless these high doctrines be inherently self-supporting they must be established dialectically; and the dialectic must be rooted in beliefs which are logically antecedent to them. These beliefs must in my case be my beliefs, in your case be yours, in every case the beliefs of particular individuals, of "empirical egos," of mere men and women, who possess no more claim to constitute the universe than you do, or than I!

This, then, is the pattern to which, as I think, a satisfactory philosophy of the commonplace must conform. There is no use telling me that it is "subjectivism." After all, I am a "subject," and, like the rest of the world, must suffer from my limitations. From this situation there is no escape. But let me not be misunderstood. The individualism I defend is not designed to isolate the individual even in matters which are purely intellectual, still less in matters which concern the will and the affections. I myself hold, as I shall later explain, that the ordinary theory of human intercourse is narrow and defective; that it unduly ignores much of what is actual and still more of what is possible in the relation of spirit to spirit in social and religious life. But this is not our present business. What we are now concerned with is the rationalisation for each one of us of his or her familiar beliefs. This is an individualistic problem which can best be expressed in individualistic terms, and cannot receive any but an individualistic solution. Whatever, then, may be said for or against the wisdom of discussing it, the form in which it has been stated is not, I trust, open to serious objection.

PART III

CHAPTER VI

THE EXTERNAL WORLD OF SCIENCE AND OF COMMON SENSE

§ 1

In what I have so far said about the premises of common knowledge, I have, for the most part, confined my commentary to those which embody general principles. About the particular beliefs, which play at least as great a part in the structure of our creed, I have said little, and to these we must now turn our attention.

Their importance is not likely to be underrated by any school of thought, for they include the whole body of our experiences; and while some philosophers have held with passionate conviction that from our experiences, and from them alone, all knowledge is derived, no modern philosopher, howsoever low he may rate empiricism, doubts the value of the knowledge we obtain through the senses, the beliefs of ordinary observation, the perceptions of fact on which all the sciences are built.

Now there is no subject of speculative interest which less disturbs the " plain man " ; nor is there any which, for over two centuries, has given more trouble to philosophers. Its theoretical importance is, of course, obvious enough. Physical science (so we all believe) is based mainly on experiences of the external world; experiences of the external world are gained through perception.[1] Nothing, therefore, can be more needful for any "philosophy of the familiar" than clear notions as to what perception directly tells us, and what is its value as a ground of belief.

One would have supposed that, to questions so simple and so fundamental, the wisdom of the world would by this time have discovered plain replies. But it has not been so. By most people the questions are never asked. The few who ask them differ about the answers. On one thing only do they seem to be agreed; namely, that the natural and unsophisticated opinions of mankind on the subject can hardly be accepted as they stand. Those who most approve them admit them to be "naïve"; and "naïve" in philosophy is by no means to be regarded as a term of praise.

As might perhaps have been anticipated, differences of opinion which, in the beginning, were concerned mainly with the immediate import of sense perception, have developed and ramified into controversies which embrace the profoundest problems of physics and metaphysics, the theory of knowledge, the nature of experience, the psychology of perception, the structure of reality.

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[1] But see the qualifications to this which are dealt with in Chapter VIII.

From the point of view of these lectures the huge tangle of controversy thence resulting is something of a misfortune. The issues I desire to raise are doubtless important, but they are comparatively narrow; and in order to reach them I neither wish to drag my readers, nor to be dragged myself, into any survey of the long philosophic development from Descartes and Locke, through Berkeley Hume and Reid, Kant Fichte and Hegel, Mill and Spencer, the neo-Kantians and the neo-Hegelians, down to such modern representatives of opposing tendencies as Mr. Bradley, Signor Croce, the Pragmatists, the new Realists, and other distinguished leaders of contemporary speculation. If, therefore, my references to these great subjects seem meagre and inadequate (as from more than one point of view they certainly are) let the indulgent critic remember that I am not now dealing at large with the history of philosophy, the metaphysic of

Nature, the epistemology and psychology of perception, but only with such fragments of these subjects as are relevant to what I wish to say about the "philosophy of the familiar."

§ 2

Now the creed which we are endeavouring to rationalise is, in its most familiar form, crudely realistic. It proclaims the being of an external world, perceived, yet independent of perception, neither constituted by our thought nor qualified by[1] our senses. Our experiences of it, howsoever limited, we conceive to be direct. We feel it, see it, hear it, smell it, taste it; and from the information thus immediately obtained, Science is supposed to draw with ever increasing accuracy and fulness the authentic outlines of physical reality.

Nothing could seemingly be simpler. Here, on the one side, lies the world of men and things ready to be observed. There, on the other, are intelligent persons ready to observe it. What operation leaves less room for explanation? What operation less requires it? Yet unless I am much mistaken the history of

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[1] **On this last point, however, I think ordinary common sense speaks somewhat hesitatingly.**

Philosophy shows what difficulties it has occasioned in the past; and few there are who will pretend that the present has provided us with an agreed solution.

The question which lies at the root of the whole problem is the character of the relation between the perceiver and the perceived. It is on this that agreement is most desirable; it is on this that it seems most remote. Philosophers have naturally enough approached the subject from the perceiver's side. I shall, however, adopt a different method, and begin with the things perceived. In so doing I shall assume their external and independent reality and the truth of the sciences which deal with them. This procedure would, of course, be quite indefensible were I (so to speak) speculating at large—endeavouring, in a mood of complete detachment, to establish undiscovered truths on indisputable premises. But it is legitimate enough for one who is searching for a philosophy of beliefs which are already accepted both by himself and by all those whom he is addressing.

Now when, in pursuance of this plan, I turn my attention to the physical pole of the perceiving process I am immediately struck by the fact that the passive rôle often assigned by common sense to Nature is one which, according to science, Nature never plays. We ought not, it seems, to talk of " perceiver and perceived " ; for in the true order of causal precedence the phrase should rather run " perceived and perceiver." It is indeed commonly held that, by the exercise of selective attention and otherwise, the perceiver may, perhaps must, himself contribute to the character of his own experiences. Nor would it usually be denied that by the association of ideas and other psychical influences, the " evidence of the senses " may be largely qualified. But at bottom it is the active energies of the external world, including those of which the perceiver's own organism is the theatre, that mainly determine the character of the sense data which pass the threshold of his consciousness. In perception Nature reveals herself, and man can but strive to comprehend the revelation.

By what machinery is this revelation accomplished ? How does the perceived communicate with the perceiver ? The answer varies in different cases. But always there must be an organism adjusted to receive the message ; always, when the object perceived is not itself in contact with the organism, there must be some other physical agent connecting the two, and always the organism must be so associated with a mind that the physiological changes in the one are accompanied by significant experiences in the other.

All this is very familiar. Let me hasten to add that ,it is also very strange. Consider by way of illustration a concrete case; none the worse for having, I suppose, often done duty before. A remote and nameless star suddenly blazes into prominence. This, says Science, is due to the fact that centuries ago, and billions of miles away, a particular collection of electric charges began radiating into space with a new and catastrophic violence. As time went on an infinitesimal fraction of these radiations, which *happened* to be of the right frequency, *happened* also to reach a small planet where, and where only (so far as we know), there *happened* to be organic sensibilities rightly tuned for their reception. Thereupon there came into being a new effect, namely, the direct experience by man of this old and distant cataclysm, the news of which had during these many ages been wandering unnoticed through space in the shape of electromagnetic oscillations!

This, or something like this, is what happens when Nature reveals herself to man. It is a theme no doubt on which there are endless variations. The revealing light rays need not be emitted by the object; they may be reflected or diffracted by it. The object may be near or far. It may be heard or touched or smelt and not seen. But always (on this view) the experiences which are supposed to provide us with our knowledge of the external world are the "end product" of a complicated process which originates in the object perceived and finishes in the perceiving mind. This process always takes some time, and often takes much time. It may begin in a remote past, at the farthest star revealed by the most powerful telescope, or in a portion of matter which touches the perceiver's body. In every case the perception is an effect, in every case the "thing" perceived is one, but only one, of its causes. In no case is this "thing" identified with any element in the intermediate train of psycho-physical events by means of which it is ultimately revealed to the perceiver.

§ 3

I believe this theory (or some other essentially similar) to be inextricably bound up with any scientific view of the relation between man and his material surroundings. I have stated it in terms which, to the best of my knowledge, conform to the science of our day. But it could equally have been stated in conformity with the science of yesterday, of a hundred years ago, of two hundred. The changes in our scientific outlook since the days of Locke and Berkeley have been prodigious. But would not Newton, their contemporary, have said in substance very much what I have been trying to say? Would he not have allowed that, whatever else our perceptions may be, they are effects—the outcome of a complex process occupying time and traversing space, in which all the stages except the last are physical or physiological? Would he not have allowed that whatever else we may say about the object perceived, at least it is one among the causes of our perceiving it; and to that extent therefore may properly be described as self-revealing? For my present argument no more is required; and the fact that since Newton's day (for example) the corpuscular theory of light has been abandoned, and the electrical theory of matter discovered, though it may change the terms in which the discussion is conducted, does little or nothing to modify its essential import.[1]

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[1] As far as I understand the question, this statement would not require to be modified in consequence of recent developments of the theory of relativity.

Whatever may be said against this scientific version of realism, it escapes some difficulties which (as we shall see) other forms of realism sometimes find embarrassing. In particular, the discrepancies between what *appears* and what *is* are robbed of all their terrors. On the scientific theory of perception these discrepancies are not only natural and explicable, but inevitable—the obvious results of the conditions under which perceptual experiences are said to be produced. We can understand, for instance, why a wooded hill looks small and blue on the horizon, large and green when near. We can understand why two events, which in fact happen at the same moment, like the flash and the noise of an explosion, when perceived from afar seem divided by an interval of time which grows with the remoteness of the observer. We can understand why two events, which in fact happened centuries apart, appear in experience to be simultaneous. We can understand why a straight stick seems bent when half immersed in water; and why a bowl filled with liquid may, under fitting conditions, at the same moment feel warm to one hand and cold to the other. Errors of perception, the mere possibility of which involve some thinkers in a very nightmare of perplexity, thus become the most natural things imaginable—much too natural, indeed, for the convenience of those who, like us, are concerned to find a satisfactory philosophy of familiar knowledge.

§ 4

This view of perception, which treats it as due to a train of causes, physical, physiological, and psychical, of which the object perceived is one, seems forced on us by scientific discovery. Clearly, therefore, it is not self-evident. Logically it involves elaborate inferences; historically it is, in its present form, the product of long research. Few conceptions are more remote from ordinary experience than those by which ordinary experience is scientifically explained. No man has ever seen, no man will ever see, such entities as atoms, electrons, electromagnetic oscillations, and the rest of the machinery by which physical nature affects the living organism. No man (as yet) can give any adequate account of the physiology of perception. No man can either perceive or imagine the mode in which physiological changes give birth to psychical experiences. Psychical experiences themselves are full of mystery and suggest endless problems. Whatever else therefore may be said about the process by which, in the order of causation, perceptions are produced, no one will suggest that our knowledge of it is due to immediate intuition.

On what, then, is this knowledge founded? The answer can only be that our knowledge of the perceptual process is itself founded on perceptions. Thus while science shows the way in which perceptions are produced, perceptions provide the grounds on which science is believed. We are therefore face to face (not for the first time or the last) with two contrasted but complementary processes—the one causal, the other cognitive; the one concerned to tell us "how," the other concerned to tell us "why"; the one moving from conditions to consequences, the other moving from premises to conclusions; the one leading us through successive effects from electrons[1] to experiences, the other leading us by the way of inference from experiences to electrons.

§ 5

Now as the first of these processes is undoubtedly the business of the sciences, so the second has been one of the chief preoccupations of philosophy. But from the point of view of our present argument no such separation is possible. The two must evidently be considered together. There can be no satisfactory "philosophy of the familiar" unless they can be made to harmonise, unless they can be fitted into one scheme—and this is an operation by no means so easy as we might at first be inclined to suppose.

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[1] I believe that according to recent practice "electron" is confined to negative electricity. But as (so far as I know) there is no single word for an electrical sub-atom I have left the word unchanged. No one will be misled.

So soon, indeed, as we attempt it we are brought face to face with a curious and somewhat perplexing paradox. For is it not plain that the premises of science agree but ill with its conclusions? Its premises are for the most part the immediate beliefs which embody the perceptual experiences which we obtain through the avenues of sense. These show us, so at least we commonly suppose, a world of objects infinitely varied in their character and distribution: large and small, hard and soft, warm and cold, coloured and dark, solid, liquid, gaseous. The beliefs embodying these experiences are the premises of science. What, then, are its conclusions? Its conclusions are that the real world of material objects is of quite other sort. It wholly consists (so it seems) of electrical sub-atoms, organised in *minute, quasi-planetary systems, propagating* disturbances of constant velocity through spaces unoccupied or occupied only by the ether. Relative position, relative motion, mass, and other familiar attributes of matter these entities no doubt possess. But to declare them endowed with qualities which are or could be immediately revealed in sense perception, would be untrue, almost meaningless.

The difficulty, it may be noted, makes itself felt long before we drive causal explanation back to electric charges and electromagnetic disturbances. Consider, by way of illustration, a much less remote example. The sky, as seen, is blue. This, according to common sense, is an immediate intuition of external fact. Science, however, in its search for truth, is not content with this simple statement; it must needs ask *why* the sky, as seen, is blue. The obvious answer—the one that satisfies all children and the vast majority of men—that the sky *looks* blue because it *is* blue, does not satisfy the physicist. He pursues his investigations, and comes to the conclusion that distributed through space in the neighbourhood of the earth are minute bodies which scatter the mid-day light of an unclouded sky in such fashion that, of the rays which excite the sensation of blue, an abnormal proportion reach the eyes of terrestrial observers. In other words, unseen particles, diverting imperceptible waves, in an imperceptible ether, produce in men of normal constitution the perception of a far-off, blue, dome-like expanse. This explains, or helps to explain, why the sky *seems* blue; but can we really treat it as equivalent to the common-sense statement that, judged by the immediate evidence of the senses, the sky *is* blue? I think not.

§ 6

That these two conceptions of physical reality—the one due to ordinary perception and the other to scientific inference—are entirely different, seems to me quite undeniable. That the second has its roots in the first is not likely to be disputed. But it will perhaps be asked whether these obvious truths possess any philosophical interest. What is there either puzzling or surprising in the fact that in the process by which scientific theories have been developed from unscientific observations the two should have widely diverged? Is not such divergence inevitable? May it not be at once the proof and the measure of progress? Why, then, should we complain?

This contention is plausible but unsound. Our troubles arise not from the fact that increasing knowledge has upset our instinctive beliefs, but from the fact that the new beliefs, though inconsistent with the old, sprang from them, coexist with them, and depend on them. Common sense in its scientific shape contradicts common sense in its unreflective shape, yet never ceases to lean upon it.

It may perhaps be urged that the supposed difficulty is due to an erroneous view of the relation between science and observation. After all (it will be said) the physicist who explains the colour of a summer sky sees it just like humbler men. He finds nothing strange in the discordance between reality as it is given in perception, and reality as it is conceived by science. He never regards himself as the victim of an optical delusion, nor dreams that he is faced with any problem in the theory of knowledge.

Nor indeed is he—provided he be permitted to assume that all perceptions are to be treated as effects, and all our knowledge of the material world as an inference from these effects to their independent causes. If this were a tenable theory there would be nothing calling for comment in the fact that the world, as it is perceived, has little likeness to the world as it exists, that the blue sky (for example) is in truth neither blue nor properly speaking (I suppose) a sky. There would be no contradiction to be solved, nor even a paradox to be smoothed away. For why, speaking generally, should effects resemble their causes? Why, in particular, should things or events in an external world, blindly acting through the complex machinery whose character I have tried to indicate, produce in the observer an intuitive apprehension of their true reality? Looked at *a priori* such a result would be surprising indeed. All that we have a right to expect from the causal point of view is, that the character of a perception should vary with the nature of its object, and with the varying conditions under which that object is presented to us.

But if from the causal point of view this be all that we have a right to expect, does it from the cognitive point of view give us all that we are bound to demand? Freely granting that, if we accept the scientific account of perception, things can hardly be as they seem, are we not at once forced to enquire by what right we argue from what they seem to what in fact they are? Can we lawfully travel from intuitions which are admittedly erroneous, to conclusions which we presume to be true ? If we cannot, then what becomes of the empirical basis of science ? If we can, then by what rational procedure is the feat accomplished ?

CHAPTER VII

THE SUBJECT CONTINUED

§ 1

THE question with which the last chapter terminated brings us to the heart of the problem I desire to bring before you in this chapter. Let us consider it more in detail.

It has already become plain that in the routine of daily life we find ourselves treating sense experience in two quite different ways, and employing two quite different methods of gaining knowledge through perception.

The first is the way of ordinary common sense in its most ordinary moments. It is instinctive and immediate. It is used by all mankind, and presumably (*mutatis mutandis*) by the lower animals also. When following this procedure, we accept a world of material things *as* we perceive it and *because* we perceive it. Thus do we obtain our main stock of working beliefs about our physical environment. Perceptions thus employed provide subjects for the painter and inspiration to the poet; as most persons suppose, they introduce us to the "real" in its most "solid" and substantial form; and whatever may happen to them in philosophic or scientific crucibles, by mankind, including philosophers and men of science, they will never in practice be abandoned. This way of using them I shall call the direct method.

But there is quite another way of treating perceptual experiences, also known to common sense, but greatly and increasingly developed by science. I shall call it the indirect method. It consists in regarding perceptions, not as bringing us into immediate cognitive relation with a portion of external reality, but only as supplying us with the data from which the character of external reality may (it is thought) be indirectly inferred. From this point of view, seeing, hearing, touching, smelling, and the rest, tell us about what is seen, heard, touched, and smelt, in no other way than a wound tells us about a bullet, or drunkenness tells us about alcohol. They show us effects; we infer causes as we can.

Beliefs reached in this second way are evidently due to experience. So far, therefore, they may claim the title of empirical. But they are based on a very different sort of empiricism from that to which we usually apply the name. Nature on this view is not observed; it is conjectured. The infinite fabric of the physical universe is treated as a hypothetical construction devised to account for the experiences of mortal men. These experiences (e.g. the sight of a blue sky) are no longer held to involve the immediate apprehension of external fact; they are merely experienced events which challenge curiosity—transitory consequences of which we look for a more enduring cause.

§ 2

Now how are we to value the respective claims of these two familiar though utterly different methods of penetrating by the way of experience into the world of external fact? Is it possible, for example, wholly to reject the direct method, placing our sole reliance on the indirect? The direct method, as we shall presently find, is full of difficulties whose edge would be blunted could we put all our trust in its rival. But can we?

Note what such a course involves. It requires us, in the first place, to treat as symbolical the familiar experiences of the external world which colour our whole lives, which are common to all mankind, which provide the historical origin, if not the logical foundation, of all the sciences of Nature. For these inevitable intuitions of an external reality it requires us to substitute, as our sole empirical guide to the world of physical fact, inferences from perceptions regarded as the passing effects of causes that (by hypothesis) are never themselves perceived. On this frail foundation of argument we are expected to construct a scheme of beliefs that shall embrace the whole fabric of the natural world. Surely the shadowy procession in Plato's cave would provide a surer guide than this to truths which lie beyond the limits of immediate vision.

For, observe that, on this hypothesis, we have literally nothing to guide us; no laws except those, if any, which obtain between these transitory experiences themselves; no antecedent probability that truth lies more in one direction than another; no antecedent probability that what we are in search of, namely, the enduring material universe required by science, is to be found in any direction whatever. The whole realm of the imaginable lies, indeed, before us at our absolute disposal. We may believe what we like. We may invent whatever kind of cosmic scaffolding seems best to suit our needs. But wealth like this is indistinguishable from beggary. Who would willingly sit down and speculate in the void on the kind of external world which of all possible external worlds is the one best suited to engender his individual train of sense perceptions? Could a more barren occupation be imagined? Could fancy be put to uses less responsible?

But (you may be tempted to say) where is the difficulty? Take down any series of scientific textbooks, and it will be found that the work just declared to be impossible has already been happily accomplished. In their kindly pages is described the very thing we are in search of—" the external world best suited to engender our individual train of sense perceptions"—and (you will probably add) the value of its claims can in the immense majority of cases be, directly or indirectly, tested by experimental verification.

But how was the " most suitable " external world originally discovered? By unguided explorations through the vacant tracts of the " possible "? Not at all. As I have already noted, the scientific conceptions which seem most remote from the naïve experiences of the plain man are all historically rooted in them, and in the name of " verification " are always appealing to them for support. Science could never have been arrived at, nor can its conclusions now be verified, by the sole use of the indirect method. This, in its purity, is completely impotent. It is (by definition) an argument from effect to cause; and whenever this argument is used it assumes a framework of beliefs within which, and only by the help of which, we can legitimately draw conclusions. We must know, for example, the causal sequences on which our inferences are founded. This can only be known if we have already broken through into that external world where, according to science, its causes are mainly to be sought for. In fact, of course, we always do break through, lawfully or unlawfully. At no stage in the history of the individual, at no stage in the history of the race, have men ever depended for their knowledge of physical reality solely upon conjectures as to the character of the unperceived causes which have produced their individual perceptions. Always there has been, and always there must be, some use made of direct observations after the manner of crude, common-sense realism. Always among the things observed have been independent material objects with which, throughout the period of observation, the observers believed themselves to have direct acquaintance. These were the original occasion of all scientific speculation: they still constitute the main substance of our thoughts when we deal with the external world. To that external world we can never penetrate without their help. Deprived of their aid we should for ever stand, each in a little world of his own, as powerless to reach outside reality as if we were philosophers hopelessly entangled in some representative theory of perception.

§ 3

The indirect method, therefore, taken by itself, carries us nowhere. How far can we travel if we use only the direct method ?

Consider a particular case. I get a glimpse, let us say (with apologies to "Kim"), of a red bull on a green field. This seems, on the face of it, to be an immediate apprehension of external fact, a direct intuition of physical reality. I do not arrive at a conclusion—I see, and I believe. But on reflection it becomes obvious that I may believe wrongly. The red object may not be a bull. The green object may not be a field. Though, therefore, there was no element of conscious inference in the act of perceiving, nevertheless the perception, as I have described it, cannot be regarded as supplying us with immediate knowledge wholly uncontaminated by alien ingredients. So much must be conceded. But though as a whole this perceptual deliverance may be thus unsatisfactory, can we not find in it some element which resists this (or any other) process of destructive criticism? I conceive that we can. If I cut down the contents of what I at first regarded as the immediate experience of a bull in a field to much narrower limits; if I admit that what I directly observed was not necessarily a red bull in a green field, but only a red patch on a green patch, my position, it would seem, becomes impregnable. No amount of reflection on my own part, or argument on the part of other people, will persuade me that I did not see what I know that I did see. I may have been drugged or dreaming; but I was not in error. The experience thus reduced may have had small significance; it may even have been what we call "illusory"; but it was mine, and, even if illusory, it was true.[1]

But granting that it was true, for what purposes can it be deemed sufficient? If this, and only this, kind of knowledge is directly supplied by sense experience, can we even assert with confidence that perception makes us directly acquainted with an independent world at all ?[1] We may, of course, interpret our perceptions of the red patch and the green patch by the indirect method of which we have already spoken. We may treat them simply as effects. We may investigate their causes, and may come to the conclusion that among them was a red bull in a green field. But it is not the indirect method that we are now discussing; and it seems plain that if we can make no better use of the direct method than the one I have indicated; if its messages when purged and purified are of an import so trifling, it can never furnish our scientific beliefs with anything even distantly resembling an adequate foundation. The deliverances of experience may be indubitable, yet if they are all of this pattern they must surely be quite insufficient.

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[1] This argument, of course, assumes the trustworthiness of memory, which is not here in question.

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[1] The reader will please observe that I do not describe the perception of the red patch on the green patch as a *sensation* ; nor do I wish to suggest that it is merely subjective. I desire to beg no philosophic question.

§ 4

But if, when taken separately, neither the indirect nor the direct method of using sense perception provides us with a satisfactory groundwork for our familiar beliefs in their scientific form, can the two methods be combined? In the ordinary practice of life we constantly employ both. Sometimes perception is treated as the immediate intuition of external fact—this is the direct method; sometimes as an effect from which the external fact may be inferred—this is the indirect method. We use them alternatively without scruple; travelling from one to the other with no very clear consciousness of what we are doing.

But such a hand-to-mouth procedure can hardly be described as using them in intelligent combination. This can only be accomplished (so it seems to me) if the provinces of each are defined on some intelligible principle. I do not recall any serious attempt to do this except by the old and famous theory of the "primary" and "secondary" qualities of matter. In this scheme the direct and the indirect methods were both employed, and their spheres of operation more or less delimited. The primary qualities, such as shape and mass, were known, or were theoretically knowable, by immediate acquaintance. The secondary qualities, such as colour and sound, were supposed to be no more than effects produced by the action of the primary qualities on the perceiver's sensibilities; the real nature of that action being arrived at indirectly and by inference.

Modern philosophers have dealt somewhat roughly with this scheme, of which fragments still lie loosely embedded in much scientific exposition. But they have not seen the need for something of the kind, and have never provided a substitute. Untenable though it be, it had merits which it would be unkind to forget. Its realistic side did something to satisfy common sense; for it left standing at least the bare skeleton of that external world of matter with which we suppose ourselves to be familiar. At the same time it left a place for the indirect interpretation of perceptions, by treating the secondary qualities as effects, and seeking their causes among the energies of the primary. There was thus something for everybody—except perhaps the Neo-realists. Less than might be desired for common sense; still less for critics of common sense like Berkeley and Hume; but a good deal for science as science at that time stood.

I am not sure that for a century and a half, or more, after the publication of Newton's "Principia," physicists had much to say against it, however ill-fitted it may have been to survive serious criticisms. But with every step in the progress of physics difficulties have multiplied. So long as science was content to explain the character of matter perceived in bulk by the behaviour of more or less similar matter, divided into molecules or atoms, these difficulties hardly obtruded themselves. Molecular was molar writ small; and to the pictorial imagination, the kind of thing which *truly existed* did not seem very alien to the kind of thing which *appeared to be.* We may remember Maxwell comparing atoms to "manufactured articles," and the ordinary way of visualising the kinetic theory of gases was to regard an enclosed gas as consisting of very diminutive and perfectly elastic material globules untiringly dashing now against their prison walls, now against each other. This sort of thing corresponds as well as we could expect with a theory of matter which divides its qualities into primary and secondary. Not so, however, do later developments.

In truth, through the progress of scientific knowledge, appearance and reality are now most widely sundered. The external world in its true character recedes more and more into the realm of the imperceptible and the unimaginable. We have no senses wherewith to apprehend it. On the other hand external objects, as we perceive them, are no more than a mirage of transitory effects, having little resemblance to their more enduring causes. And though we must indeed believe that physical realities are objects of knowledge, that their character may be expressed in appropriate concepts, and their movements formulated in suitable equations, it is plain that we shall never extract from the theory of "primary and secondary qualities" any substantial contribution to the philosophy by which these conclusions can be rationally supported.

§ 5

Let me now endeavour to recapitulate, from the point of view of methodological doubt, the results of this discussion on perception, and on the sort of access which perception gives us to the physical world of science and common sense.

In every case we may regard the causal process of perception as beginning, for the purposes of our argument, in the object perceived, and ending, after a complicated series of transformations, in the experience of some percipient. In every case, this end product of the causal process is also the intuitive beginning of the cognitive process. But it may initiate the cognitive process in two quite different ways. It may either provide the percipient with direct knowledge of the object perceived : or it may itself, when treated as an effect, constitute an important part of the material from which the character of the object can be indirectly conjectured.

Now can perception, thus schematically described, give us what we want ? Can it, either in its direct form or its indirect, supply us with a body of intuitive truths sufficient to support our familiar beliefs about the world of matter ? Let me re-submit concisely, but in a convenient order, the main reasons which suggest an unfavourable answer.

It will be recollected that in opening our enquiry I began with the causal aspect of perception. In these concluding observations I shall reverse the procedure ; and starting from the perceptions which the causal process has produced, shall travel back by the cognitive road to the self-revealing world of nature—making a few notes by the way.

1. We cannot flatter ourselves that our theories of perception are in order, until the relation between the direct and the indirect methods of using it is systematically explained. I cannot think that this has as yet been accomplished; and if it be true, as I contend, that neither the direct nor the indirect method suffices by itself, the importance of the task is manifest.

2. The direct method is, I suppose, rarely used in its integrity. Our immediate perceptions of external fact are always, or almost always, contaminated with instinctive interpretations, which modify their primary import.

What we treat as intuitions are thus more and other than what is immediately given us through the senses. But how much more, and how far other, remains, so far as I am aware, still to be determined. It has moreover also to be determined whether, if purified from all extraneous accretions (were such an operation possible), these intuitions would not be so attenuated as to be quite unequal to the calls which science and common sense habitually make on them. I rather think they would. But however this may be, it is evidently most inconvenient, from the point of view of theory, that the direct method on which everything depends should so often in practice have to use perceptions qualified to an unknown degree by alien elements.

3. As regards the indirect method, its practical importance cannot be exaggerated, though it plays a part which of necessity is ancillary and dependent. Alone it is powerless. It cannot work *in vacuo.* It always assumes an external world partially revealed by the direct method, whose outline it can do no more than correct and expand. If therefore the direct method were wholly to fail us, the indirect method would provide no substitute.

4. So much for the particular premises on which our knowledge of nature depends; the unnumbered rootlets nourishing the growth whose final flower is science. Obviously we should next enquire how these premises can best be used; by what methods of inference we can proceed from perceptions treated as effects to the external causes which produce them; on what assumptions the individual can build on the experiences of the race, and how these assumptions are to be justified. These and other cognate questions are of vital importance to any philosophy of the familiar, but I have touched elsewhere on some of the many

difficulties which beset them, and in this chapter they must be passed over with only a passing reminder that they are there, and cannot be ignored.

§ 6

We may now suppose ourselves to have reached the goal of the cognitive process, namely the physical universe as described by science. Let us assume that our double journey has been successfully accomplished —and that we know in broad outline both how our experiences of nature are produced, and how our knowledge of nature is arrived at. What do we make of the result? Do the two processes fit into the same picture? Can they be regarded as related fragments of one consistent whole?

It is hard to think so. When (as it were from the outside) we contemplate the elaborate process of perception-making, what is there to inspire confidence in the veracity of its final message? Why, for instance, should the complex physical and physiological transformations, which precede and produce an act of vision, turn out to be the oracles of truth? If they are, if we really see what really is, can anything short of a miracle explain the marvel?

Perhaps not, it may be replied ; but why be troubled ? The marvel never happens. What happens is that the oracle delivers itself of a message properly, if unkindly, described by those most competent to speak as crude and naïve ; a message which travesties the facts, and gives us a notion of the physical world very different from any revealed by science.

This explanation, we may allow, relieves us of one difficulty, but does it not immediately plunge us in another ? On what is science ultimately founded, unless it be on these same crude and naïve deliverances ? From these we cannot escape. We cannot regard them as merely symbolical ; we cannot treat them merely as effects ; we depend upon them in the conduct of life ; they are with us through all our explorations of nature ; we begin with them ; we return to them—yet all the time we know them to be false ! Can any conclusion give more food for thought to those who faithfully employ the instrument of methodological doubt ?

CHAPTER VIII

THE SAME SUBJECT AND PHILOSOPHY

§ 1

At this point in the argument a critic may be tempted to observe that while I have talked lengthily about perception, I have made little use of the labours which generations of philosophers have expended upon the subject. Have they, it will be asked, done nothing to clear away the difficulties with which it seems to be beset? Their labours, I should reply, have assuredly not been without valuable results; but it cannot be pretended that they are yet in a position to supply us with an agreed theory. On the contrary, I hazard the conjecture that since the days when Berkeley first turned the attention of the philosophic world to certain aspects of the problem, many controversies have been started, and few solutions have been generally accepted.

Consider the notorious differences which, within my own recollection, have divided thinkers of the first rank in the English-speaking world. Psychological idealists or mentalists (as, after Sidgwick, I prefer to name them) would say that my perception of a red bull in a green field was a complex of sensations; and that sensations, like feelings and desires, are mental states to which no independent material objects correspond. "Cosmothetic idealists" as Hamilton called them, or "Transfigured realists" as Spencer called them, would agree that they are mental states; while holding that they are states to which material or non-mental objects *do* correspond. The new realists say that they are, at one and the same time, both mental states[1] and non-mental entities—thus differing from mentalists in asserting that there is an independent reality to be known, and from transfigured realists in asserting that our knowledge of it is direct.

§ 2

Now, so far as I can see, these three philosophic theories have nothing in common except the attribute of complete incompatibility with the scientific theory of perception, which is the one which we are concerned to establish. This, as we know, maintains that the perception of the red patch on the green patch is a mental result of cerebral changes set going through the optic nerve by light rays of various frequencies selectively reflected from certain illuminated surfaces! Can we force any such doctrine into conformity with mentalism?

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[1] Or at least belong to the content of consciousness.

Evidently not. If all the entities of which we know, or can know, anything are mental and only mental, if they are mental as ideas are mental, the material universe required by science dissolves into an unsubstantial dream. The enduring framework of the external world must be expunged from our picture of reality, and what remains will be processions of mental "movies," with or without a "Self" to which they are presented.

These extreme conclusions, which could logically be pressed still further into solipsism, are consistently entertained by no one; and various are the expedients employed to mitigate their rigour. None of these expedients, so far as I know, have met with much favour. Berkeley's device was theological. He brought in God to provide an ideal world more stable than any compounded from the fleeting feelings of the human mind. Hume's device was practical. He lived, it seems, a double life—in his library, a mentalist; a realist elsewhere. Mill's device was verbal. He postulated what he called "permanent possibilities of sensation " ; apparently under the impression that by devising a formula which contained the word " permanent " he had done all that either science or common sense could reasonably demand.

It is unnecessary, I think, to dwell further upon the insufficiency of this doctrine in any of its forms to perform the one task which, at the moment, we are asking it to undertake. In itself it has much to recommend it. But as a foundation for common sense, either in its primitive or in its scientific form, it seems almost ludicrously insufficient. " If idealism be true," says Herbert Spencer, " evolution is a dream " ; and I feel bound to agree with him.[1]

§ 3

" Cosmothetic idealism," " Transfigured realism," and other doctrines of representative knowledge are in little better case. Framed to combine all that seems true in mentalism with all that seems necessary for scientific realism, they have in large measure the defects of both and the merits of neither. They hold that there is an external reality—so far agreeing with science. They deny that we can ever perceive it, or indeed anything but our own sensations—so far agreeing with mentalism. But they are for ever debarred from welding the two halves of their theory into a coherent whole, because they are quite unable to find any logical bridge from the sensations of which we are immediately conscious to the external world in which we are resolved to believe. Confined, each one of us, to the contemplation of his own mental states, we may assume, if we will, the existence of an outside reality, but it can never be more than an unproved and unprovable conjecture.[1]

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[1] I have developed this argument in ch. ix of " Philosophic Doubt."

Such speculations, however, are not merely vain ; they are also at the present moment held in small esteem. I turn therefore to the last of the philosophic theories I have mentioned, which is vigorously advocated by an able and self-confident school on both sides of the Atlantic. The New Realists are in strong and conscious opposition to every form of philosophic idealism—psychological, transcendental, " cosmothetic," what you will. Indeed, from my point of view, they are almost too deeply absorbed in their anti-idealist campaign. Their polemic is conducted with a vigour which somewhat upsets the balance of their exposition; and the problems with which we are here specially concerned receive the less attention at their hands.

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[1] I have criticised H. Spencer's form of this doctrine at some length in " Philosophic Doubt," ch. xi. The difficulty here referred to is in substance identical with that already dealt with in connection with attempts to base science entirely on the indirect argument from effect to cause.

§ 4

I make no attempt (need I say it?) to summarise their philosophy; contenting myself with a commentary on the particular doctrines which seem most relevant to our main line of argument.[1]

The first of these refers to the "status" of the object perceived. The New Realists agree (as I have already said) with the mentalists in thinking that this always belongs to the content of consciousness. But while the mentalists regard this proposition as throwing a blaze of light on the essential character of experienced reality, the New Realists treat it as a barren tautology, self-evident indeed but purely verbal. According to them it merely states that what we are conscious of is in consciousness; that what we experience is experienced;—propositions without doubt veracious, but not adding anything of importance to the sum of human knowledge.

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[1] See Professor Perry's "Present Philosophic Tendencies," ch. xiii.

The point may be well worth making. Yet I cannot but suspect that mentalists have some more solid justification for their opinions than a bare tautology. Many philosophers, belonging to different generations of thinkers and different schools of thought, not deficient in natural acumen, and by no means anxious to agree with each other, have held the view that the presentations of sense do to some extent share the essential nature of ideas; like them are psychical; like them are transitory; like them have no existence except as experienced. Nor did it ever occur to realists like Reid, or to critics like Kant, that an effective campaign could be conducted against Berkeley's mentalism by treating it as no more than a question of words. However this may be, I need not labour the point. Let us suppose, for the sake of argument, with the New Realists, that while the object perceived, in so far as it is perceived, is mental, it may nevertheless exist quite apart from mind, and though partially revealed in perception, may nevertheless be wholly independent of it.

§ 5

Now what relation has this theory to the common-sense view of the external world in the naïve form discussed in the last chapter? In two most important respects the resemblance is evidently very close. Common sense assumes (1) that things exist as we perceive them, and (2) that their character and duration are quite independent of our perception. We never, in our ordinary moments, suppose them to be constituted by thought or sophisticated through the operation of psychological laws; neither do we imagine that they only exist so long as they happen to be experienced. If I am right in supposing that to both these doctrines the New Realism subscribes, we have only to ask whether it has developed or explained them in such a way as to avoid the perplexities by which the common-sense statement of them is certainly beset.

It will be remembered that these perplexities were due in part to the divergence between the external world as we perceive it and the external world as modern science assures us that it is. Common sense does not solve these difficulties, but, as we have seen, it has its own method of eluding them. Fundamentally this method largely consists in the free use of unacknowledged transitions between the direct and the indirect method of gaining knowledge through perception. The reality of an independent world of things, situated in space, and capable of producing experiences by acting on organisms which are themselves to be reckoned among things situated in space, is assumed whenever the assumption is convenient; and it always is convenient when awkward questions are asked about the different appearances presented to the same observer by the same " thing " in different perspectives or under altered circumstances. We then for the moment cease to regard experience as directly introducing us to external fact. We suddenly treat it as due to a combination of causes, among which the " thing " experienced is but one—so that we are free to attribute differences in the appearance of the same external object, not to changes in the object itself, but to changes in the conditions under which we happen to perceive it.

This method, as has been seen, is open to criticism; and, if I rightly understand them, is utterly rejected by the New Realists. They hold a theory very like that of naïve common sense, but purged of the incoherences required to make common sense tolerable in practice. As a result they present us with a conception of the material universe which, to me at least, seems equally repellent to common sense in its primitive and in its scientific form—a conception most difficult to realise and quite impossible to accept.

§ 6

Let us consider for a moment what this conception is. There is an interesting passage in Hume's "Treatise on Human Nature," to which Professor Montague and Professor Perry[1] have called attention, where the great doubter plays with the supposition that perceptions and objects are identical—both possessing "continued and uninterrupted being," both being "sometimes present to the mind, sometimes absent from it," both remaining in either event essentially unchanged. This I understand to be the opinion also of the New Realists. For them the world consists of elements which are mental when experienced, but in themselves are "neutral"—determined (that is to say) neither by mental nor by physical relations—sometimes imperceptible, and always independent of perception. Not everything therefore is perceived, but everything which is perceived exists independently as it is perceived. In other words, every "percept" has a separate and enduring existence out of all necessary relation to any process of perception whatever. Its status as a "percept" is transitory and accidental. It has but a passing place in somebody's mental experience, suffering no essential change when it either makes or breaks this temporary connection. What it *seems* to be, that, in very fact, *it is*; what it is while under observation, that it will be when observed no more. I conclude that on this theory there are no such things as "mere appearances"; and that what in ordinary parlance we call the "aspects" of any object are, in fact, persistent and self-sufficing entities, enduring occupants of an external world.

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[1] "Present Philosophic Tendencies," p. 306.

The speculative difficulties of such a theory seem to me serious, but my main concern is not so much with them as with the bearing of the theory itself upon accepted science. To me, I own, the two appear quite incompatible. If I am right in believing that science always assumes, and always must assume, that perception is the end product of a temporal process which begins with physical happenings in the world of space, time, and matter, we are dealing with a doctrine difficult enough to harmonise with any philosophic theory, but quite impossible to harmonise with neo-realism as I have described it. For in neo-realism thus understood there seems no room left for this causal view of perception. The planet Mars, to take Professor Perry's example, has an independent and persisting existence as a small red star. A small red star it was when unperceived, a small red star it will remain when it is perceived no more. The only difference which perception makes is that the planet while perceived becomes somehow part of some one's mental experiences, without being itself in any way affected. This no doubt is excellent realism. But it is not the realism of Science; nor do I understand how it can be made consistent with any scientific theory of perception whatever. It does not explain how the planetary object seen by the naked eye can be the same as the very different-looking planetary object observed through an astronomical telescope, nor how, speaking generally, numerical identity can ever be associated with diversity of appearance. But if that which *seems* different must always *be* different, then surely there is an end of scientific realism.

§ 7

It may perhaps be urged that the theory I have been commenting on, whether tenable or untenable, is not the theory of the New Realism; and I am by no means sure that it is. For the neo-realists, judged by many authoritative passages in their writings, seem also to hold a very different view. They are acutely aware of the shortcomings of "naïve realism." They know well that there is "an elaborate mechanism underlying sense perception," that this brings in its train "temporal and spatial aberrations," so that "what we perceive will depend not only upon the nature of the object but on the nature of the medium through which its energies have passed on their way to our organism, [and] also upon the condition of our sense organs and brain." Furthermore they recognise that it is urgently incumbent upon them to "amend the realism of common sense so as to make it compatible with relativity"; that is, as I understand the use here made of this ambiguous word, to find a method of eliminating the adulterations introduced into the object perceived by the causal process of perception.

But I cannot discover that they have made any contribution to this most desirable end beyond the invention or discovery of the " neutral entity "—the persistent and independent object, which can at the same time be part of a mental experience and of a material world, while always remaining, in its essential nature, quite independent of both. Now this discovery may play a most useful part in the polemic directed by the neo-realists against " subjectivism " ; a controversy in which they are specially interested. But for us subjectivism, or " mentalism," has already been weighed and found wanting. It has been rejected as an utterly inadequate basis for science; and what we are now concerned to discover is not whether mentalism is defective, but whether the New Realism, in its second or more developed form, can give us anything better.

By the New Realism in its more developed form I mean the doctrine which introduces into Hume's tentative theory (already discussed) considerations based on the causal process of perception. Hume's suggestion (as you will remember) was to the effect that our perceptions are not merely our perceptions, but are also independent and persisting entities. Now, if I am right in supposing that the modified doctrine of Neo-realism asserts or admits that these entities—independent though they be—are qualified in experience by the "personal equation," by "temporal and spatial aberrations," by the "nature of the medium" through which they are perceived, and by the "elaborate mechanism underlying sense perception," does it not plunge us into perplexities akin to those which have so effectually discredited theories of representative perception? These theories assert that we have no direct acquaintance with external reality, but only with mental experiences from which by some undiscovered process the character of external reality may be inferred. Neo-realism in its first form does not go so far. It always claims that our acquaintance with what it calls "neutral" entities is unqualified and direct. But in its second form it apparently regards that acquaintance as inevitably modified by the "mechanism of perception." In order, therefore, to correspond with reality immediate experience requires correction. But how is any correction to be applied? If we admit that the "neutral entities" suffer "aberrations" whenever they become elements in an experience, by what standard can we estimate either the magnitude of the aberration or its character? We can no more get outside our own experience into a position whence we can compare some "neutral entity" as it is "in itself" with the same entity after it has been dealt with by the "elaborate mechanism underlying sense perception," than the believer in representative perception can compare his experiences with the realities he thinks they represent. Errors by which every possible observation is infected, no possible observation can either measure or amend.

§ 8

I cannot, therefore, believe that neo-realism really gives us much assistance in our particular line of enquiry. We are asking it (*a*) to indicate the cognitive process by which we may reasonably argue from our immediate experiences to the character of the material world, and (*b*) to bring this into harmony with the causal process by which the material world reveals itself in our immediate experiences. I cannot see that it performs either of these tasks. Perhaps it does not desire to perform them. In so far as it adopts Hume's half-forgotten speculation, it seems to conceive the external world in a manner quite incompatible with ordinary scientific realism. For, by treating every percept that ever has been, or that ever can be, as an independent denizen of the "neutral" limbo, it chokes up all the familiar avenues of physical causation, and makes it impossible to form any tolerable conception of this overcrowded universe, or of its relation to those who suppose themselves to perceive it.

If, on the other hand, it adopts the scientific version of the causal process of perception without any attempt to combine it with a revised version of the cognitive process, it leaves us where it found us, face to face with the unresolved discord between the causes of belief and its reasons—and this in the region where we least expect to find it—the region of everyday experience, of plain matter of fact, of the accepted sciences, and of ordinary common sense.

§ 9

It may be worth adding a brief postscript to the preceding argument. I have already observed that one of the difficulties which everyone feels about mentalism is that it seems to supply no basis for our beliefs in the enduring world required by science. Does realism fare so very much better? Every experience of an object is for the realist, as for the Berkeleyan mentalist, a transitory event. It is true that the mentalist regards the experience as exhausting the fact. He identifies *esse* with *percipi*. For him an object which is not being perceived does not exist. It is also true that for ordinary common sense, and perhaps even more completely for the neo-realist, an object that was once perceived but is perceived no longer may nevertheless continue to exist as it did before. But surely also it may not. The mentalist argues that the percept from its very nature *cannot* endure. The realist denies this; but can he give any very satisfactory reason for thinking that, from its very nature, the percept *will* endure? So far as I can remember, he never makes the attempt.

I admit, of course, that his view on this point seems to be the simplest, the easiest, and (as we say) the most natural. And so it obviously is, if we assume what methodological doubt requires to be proved—namely, a world which is independent and enduring. But because mentalism is false, must this assumption be true? May they not both be false? The point deserves consideration, and plainly we cannot settle it by immediate intuition. We have not, and cannot have, any direct experience of such attributes as independence and endurance, for in this connection independence means independence of experience, and endurance means endurance when not experienced. Either, then, their reality must be established by some process of inference which is to me unknown; or else our assumption that they qualify the universe of material objects must be counted among the beliefs, inevitable but unproved, whose number and importance become more and more apparent as our investigations proceed.

CHAPTER IX

THE SAME SUBJECT AND MEMORY

§ 1

THE last chapter closed with some incidental observations on the continuity of material objects, and the grounds on which we believe in it. But I touched only on the outer fringe of a subject which certainly deserves some further mention, if only for the purpose of indicating its difficulty and its importance. Its discussion formed no part of my original plan, and what I now propose to say about it will scarcely extend beyond the limits of a note. This, however incomplete, may serve to indicate a gap in my treatment of perception, though not, I fear, to fill it.

It will be remembered that when dealing with the problem of our familiar beliefs about the external world, we proceeded on the usual assumption that only through the avenues of sense could particular facts about it be immediately known; and doubtless, up to a point, such an assumption is both true and convenient. Yet are not cases of continuity and of change to be counted among particular matters of external fact? And if so, through what avenues of sense are they revealed? Can we see them or feel them; do they emit scent or sound?

If the answer is negative, as I think it should be, it seems to prove that what is immediately apprehended in perception includes much more than can be gathered through the senses. To what an empty husk would perceptual experience be reduced if it made us immediately acquainted neither with continuity nor with change! What value would the most compact series of momentary sensations possess if the message of each had to be considered in isolation, if there was no machinery for intuitively grasping them as successive revelations of an enduring whole!

There is such a machinery—the machinery of memory. And if this be admitted, it seems to follow that memory is, of all our sources of intuitive knowledge, perhaps the most important.

It is the most important, because without it no other sources would be of the smallest value. We might enjoy stretches of continuous perception. But continuous perception is quite a different thing from the perception of continuity, and much less valuable. No amount of industry could construct any sort of creed out of the dust of unremembered experiences. For these would have perished in the very moment of their birth; and even if their former existence could be revealed to us by some outside historian, what we should thereby learn we should learn indirectly, and on *his* authority, not directly and on *theirs*.

§ 2

These general reflections, which I shall proceed immediately to develop, are sufficient to show how all-important is the part played by memory in the creation of our creed, and how desirable it would be to understand its bearing, cognitive and causal, on the general body of our familiar beliefs about the external world. This, I admit, is but a fragment of a great subject. Memory has its psychological and physiological sides; educationists are interested in its improvement, doctors in its pathology; while M. Bergson, in the wide sweep of his admirable speculations in *Matière et Mémoire*, has dwelt on its relation to action, and its bearing on the metaphysics of body and mind. The point on which I propose to say a few words is a comparatively narrow one, touching only the relation between memory and perception.

At first sight the problem seems simple enough. Might we not solve it by saying that perception is confined to the present, while memory deals only with the past—that perception tells us of contemporary facts, while memory keeps a copy of the communication ? Such a statement seems plausible enough, but is not without its difficulties.

To begin with, if we wish to be precise, we cannot say that perception tells us about the present ; for as we saw in a preceding chapter,[1] this is one of the things that perception never does. External experience always lags behind fact; sometimes a little, sometimes a great deal; but always enough to falsify the generalisation.

To simplify matters, however, it may be convenient for the moment to assume, in accordance with ordinary usage, that what we perceive exists or happens at the moment when we perceive it, and that when the moment is over, memory takes up and preserves, in some kind of psychological cold storage, what perception has just surrendered.

This seems a fair division of labour; let us consider its consequences. It proceeds on the view, which I think we must accept, that only at the ever-moving present do we come into touch with external reality; that through this point of time flows all the perceptual knowledge which memory retains and reason uses; that here is the sole port of entry for the sensuous material of our familiar creed.

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[1] See Chapter VIII.

This seems obvious—almost tautological. But how is it possible? The pure present is but a fleeting instant. Extend it by as little as you please, and immediately it embraces either a future which can be known only by conjecture, or a past which can be known only by recollection—leaving us, as before, to do all our perceiving through the infinitesimal fissure, or more accurately at the moving frontier, where past and future meet.

This seems to follow inevitably from the nature of Time. But how is it to be harmonised with any tolerable theory of life in general or perception in particular? Monsieur Bergson, for example, tells us that perceptions always possess some degree of "thickness" (*épaisseur*). I incline to his opinion. And even those (if any) who think the statement excessive, who suppose themselves able to recall flashes of perception, which in the strictest sense were momentary, will admit such experiences to be rare. How do they propose to treat the " thick " perceptions which are in the vast majority? Evidently there is a serious incongruity between such " thickness " and a merely momentary present. Is there, then, a present which is not momentary—a present which endures? Can time stand still, its pauses be measured, their contents held up for our inspection?

§ 3

The idea is fantastic. But before we try and find a better, let us consider another difficulty, or (it may be) the same difficulty from another point of view.

This new problem is primarily connected with the psycho-physical machinery of sense perception. Clearly this cannot work within the limits of the passing present. Always it requires temporal " elbow room." Seeing and hearing, for instance (I take the examples which are at once the most important and the simplest), both depend upon the multitudinous iteration of similar impacts. A single electro-magnetic disturbance gives no light, a single air wave gives no sound; yet each of these, however brief it be, outlasts the moment in which it began. How much more must the number needful to produce a sensible experience involve the lapse of time?

From this it seems to follow that before sense perceptions begin, a work resembling that of memory must have been performed on the unnoticed impressions which, in the process of perception-making, successively reach us from outside. Time must somehow have been cheated; and a temporal series must have been compressed into a single sensation, as the events of a day or of a decade are compressed,[1] however imperfectly, into a flash of memory. The analogy, no doubt, is in some respects remote. But I think it is real.

It seems then that, so far as the external world is concerned, we never live in the present at all. A moving present there always is; but we never feel it, or know it, or remember it. Our experiences are always of the past. And this not merely on account of the lag in the causal process of perception, due to transmission through space. This I have already mentioned, and for the moment put on one side. My present contention depends on the fact that the physical causes of perception can only give rise to their characteristic experiences by cumulative action. And since they (e.g. a train of light waves) proceed in single file at a finite speed, they must always occupy time, they must always belong more to the past than the present, they must always require something resembling memory to compound their products into a sensation.

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[1] On "compression" cf. Bergson in *Matière et Mémoire.*

Quite apart, however, from these psychophysical considerations, it is plain that if we regard the present as the dividing-point between past and future, a moving limit and no more, it cannot contain anything which we are able to isolate in reflection, or treat as an experience. It is true that through this momentary present stream all the influences that reach us from the outer world. But it is only when these are collected, compressed, endowed with a certain unity, and with what M. Bergson calls "thickness," that they crystallise into perceptions, take their place in what we loosely (and erroneously) call the present, and count for something in our self-conscious life.

Now this is the work of memory, or something like it. It is at least the work of a faculty which preserves, prolongs, and combines, which is in constant touch with the true present, and is not wholly severed from the distant past. Evidently, then, I was greatly within the mark when, at the beginning of this chapter, I observed that without the aid of memory, sense perception could give us no information about such fundamental facts as continuity and motion, duration and change. We must, it seems, go much further. We must admit that without memory sense perception tells us nothing. Memory does more than occasionally revive what is old; it continually creates what is new. It creates, among other things, what has been called the specious present, that brief and indeterminate period which the true present steals, as it were, from the immediate past, and to which it gives its name. The crack of a whip, the flash of a gun, unquestionably take time. But it would be on the verge of pedantry to say, at the end of one of those events, that we only knew its beginning by the aid of memory! Yet this, I suppose, is the fact.

§ 4

It must be owned that the whole process is somewhat elusive. It looses its precision of outline at the very moment we hope to grasp it. This is the more disconcerting since if there be a subject about which we should expect our ideas to be, not only clear but obvious, it is surely the Present. The past may easily be forgotten, the future is always unknown, but doubt or difficulty about what lies between them might well appear impossible. Yet it is not so. Analyse the idea of Time, and the real present narrows to a vanishing point. Consider the practice of life, and the "specious" (or working) present includes a fragment of the past. The content of the first is never separately perceived, nor separately recollected. The smallest element of the second already owes something to memory. There is no sensation so brief but it fills more than a moment in the making.

We must thus accept the view that the causal process of perception, which begins (for our purposes) in the object perceived, cannot issue in beliefs unhelped by memory. What reaction has this conclusion upon our estimate of the cognitive process which takes us back, or ought to take us back, by some trustworthy road, intuitive or inferential, to a knowledge of the object? To this question I need attempt no detailed reply. It is sufficient to say that if there were difficulties in the simpler theories of sense perception discussed in Chapters VII and VIII, they cannot but be aggravated by the fresh complications which the present argument has disclosed. To all the perplexities which obscure our theories of external experience are added the mysteries inseparable from memory. None of the old riddles have been solved, and surely some new ones present themselves for solution. It could hardly indeed be otherwise. We must expect that with every additional stage introduced into the processes by which sense perceptions are produced, it becomes easier to understand why things as perceived so greatly differ from things as they are, and more difficult to justify the procedure by which truth of fact is extracted from ambiguity or falsity of appearance. No satisfactory solution of these and other allied problems is provided, so far as I am aware, by any of the philosophies, still less by any of the sciences, which have dealt with our perceptual access to the world of matter. Our methodological doubts remain for the present unresolved. We must be content to assume what we can neither prove nor even render intellectually plausible—namely, the general validity of our familiar beliefs about the relation of man to the independent and enduring environment whose secrets he is so successfully unveiling.

CHAPTER X

I'S AND THOU'S

§ 1

"We believe" (said our creed of familiar knowledge) "in a world of men and things." In the last three chapters I endeavoured to find a satisfactory method of justifying our leading beliefs about things, with (it must be owned) no very conspicuous success. Let us now turn from things to men and see whether in this region of speculation "methodological doubt" will give us happier results.

In pursuing this object the course naturally marked out for us by the general scheme of the argument is to attempt to deal with men, as in the last lecture we attempted to deal with things. In other words, to start with accepted beliefs, and endeavour to find for them satisfactory philosophic support. But here we encounter obstacles which did not trouble us when we were discussing the external world. Our beliefs on that subject are embodied for us in the science of our day. This, to be sure, is no unchanging quantity, and in an earlier lecture I dwelt on the accelerating speed with which, since the scientific era began, man's outlook on Nature had altered and developed. But, in spite of it all, the account which science gives of the most fundamental relations between the observed and the observer remains essentially the same, and we know with some precision what it is that in this connection we have to find a place for in our philosophy of the familiar. In the matter of "I's" and "thou's" we have no such aid. Physical science is silent; psychology hesitating; physiology, when it offers an opinion, unhelpful; philosophy divided against itself. Uncriticised common sense speaks with little authority; and in any case would be much embarrassed were it required to formulate the beliefs about human personalities, about "thee" for instance, and about "me," which it is firmly resolved to entertain.

§ 2

In the heading of this chapter I describe our problem as one concerning "I's" and "thou's." But why (you may ask) should we distinguish them? From what point of view can it be useful to say anything about an "I" which cannot also be said about a "thou"? Are they not members of one class? If the members of that class differ among themselves, as of course they do, are their differences in the least relevant to those which are indicated respectively by the first and second person singular? If not, why encumber the problem with a distinction so futile, expressed in terms so unexpected?

But if we are to remain faithful to the individualistic principle which I have already explained and defended, the distinction is one which cannot be ignored. From the point of view of knowledge the status of an "I" is utterly different from the status of a "thou." An "I" knows himself, or at least something about himself, immediately and from within. About no "thou" does he know anything, except indirectly and from without;—unless, indeed, it be through some kind of thought transference or mystic intuition which few persons would as yet be willing to admit and still fewer be prepared to explain. The New Realists indeed take a different view; to which I shall presently more particularly refer. But leaving these two alternatives for the present on one side, all that any "I" can know of other people's minds is presumably based upon experiences of other people's bodies. "I" (it may be argued) am vividly aware of my own organism, and am conscious of its intimate connection with my own mental life. "I" observe other organisms, which in form and behaviour closely resemble my own. "I" feel justified, therefore, in arguing that in their case also there must be "I's" existing in the background, and that to every particular body is yoked a particular mind.

Observe that I am not suggesting that this argument, be it good or bad, describes the actual process by which we, in fact, become convinced that we are personalities in a world of personalities. Obviously it does not. Nor for our present purpose does it the least matter. We are not for the moment concerned with the train of causes and effects, psychical and physiological, subjective and inter-subjective, which invariably produce this belief in normal human beings. Our present business is to discover, not how the belief arose, but how, being there, it can be rationally justified; and from this point of view I must own that the argument I have just summarised leaves something to be desired.

In the first place, it is open to the general objection that it makes my belief in "thou's" entirely dependent on my belief in such independent material objects as my body and thine. Doubtless this belief is an essential part of our familiar creed; but it is not one with which philosophy has so far dealt in any very satisfactory fashion; while there is one philosophic theory which, if accepted, would, it seems, entirely destroy any system which attempted to base our knowledge of other minds upon the argument from analogy. Mentalism, as we saw, resolves matter into a complex of sensations and ideas. "Thy" organism, therefore, and "mine" are, *as experienced by me*, nothing more, and nothing other, than groups of "my" mental states. How from such a premise can I argue by analogy to "thy" separate existence? It is no doubt true that the group of my mental states labelled *my* organism has a relation to me different from that of the group of my mental states labelled *thy* organism. But both groups are mine, not thine; and why the second group should be connected with what, for me, is a "thou" because the first group is connected with what, for me, is an "I," seems hard to understand. The view is plausible only if we start with the ordinary belief that both organisms have an independent material existence. Grant this, and it seems fair enough to argue that if one organism is attached to what is (for itself) an "I," so also should be the other. But their independent material existence is precisely that which mentalism denies. On this theory they have only one status—that of mental phenomena. And the only mind in which I can become immediately acquainted with these mental phenomena must evidently be my own. Even, therefore, if "thou" exist, thou canst not on this theory reveal thyself to "me," nor is there any road open to "me" by which "I" can hope to penetrate to "thee."

But this, you may say, is no better than "solipsism"—the fantastic theory which reduces the knowable universe to me and my states of mind, or, if you prefer it, to my states of mind without a me. I agree. Solipsism has always seemed to me the natural issue of mentalism, since if my idealism be of a kind which destroys the belief in matter, it will destroy also the only argument based on experience as ordinarily conceived for the existence of any mind but my own—a conclusion impossible to accept, yet by no means so easy to refute as some very distinguished philosophers seem to imagine.

§ 3

This difficulty, if it be one, is peculiar to philosophic mentalism. Let me briefly refer to other difficulties which seem inseparable from philosophic realism.[1] The New Realists are by no means content with the indirect evidence for the existence of " thou's " supplied by the argument from analogy. They think, if I rightly understand them, that we may have direct acquaintance with other people's minds,—an acquaintance wider indeed and more trustworthy than any acquaintance we have with our own. An " I " (it seems) knows, or may know, the experiences of a " thou " better than he knows his own, and he knows them (I gather) in much the same way!

This, I own, seems to me one of the most violent paradoxes to be found in modern philosophy. I do not deny that it is in harmony with the New Realists' general theories on the nature of actuality. They hold, as I understand them, that my toothache is not merely mine. It is mine, no doubt, in so far as it is part of my experience. But it need not be experienced either by me or by anyone else. In itself it is essentially an independent entity, which so far as we know may simultaneously be an element in many people's experiences, or may, on the other hand, for ever remain unfelt and unknown—a "neutral" element in the realm of unexplored reality.

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[1] I do not say anything in this connection about scientific, as distinguished from philosophic, realism. As we have seen, this has troubles of its own, which are, of course, transferred undiminished to any theory which founds its belief in a multitude of minds upon resemblances between material organisms realistically conceived. But if the ordinary scientific view of the physical world be accepted, as I accept it, the argument from analogy, indirect though it be, is certainly plausible, and I have nothing to say against it.

It is quite in conformity with this point of view that my dentist should know more of my toothache than I. And in one sense we may all agree that he does. He knows its causes, its consequences, and, perhaps, its cure. "I" may know none of these things. But surely "I" suffer under a direct acquaintance with it of a sort which my dentist neither possesses nor desires to possess. What I know, I know intuitively and from within. What he knows, he knows inferentially and from without. This second kind of knowledge may obviously be the most agreeable. It is so in the case of a toothache. It may also be the most complete. It is so in the case of a man of the world who divines the motives of those with whom he consorts more quickly and more surely than they. It is so in the case of the moralist who exposes unthought-of meannesses to the horrified conscience of those who practise them. It is so in the case of the trained psychologist who imparts to his pupils general verities about their inner life which they might themselves have discovered by introspection had they known how to look. But are we, therefore, to say that the dentist, the man of the world, the moralist, the psychologist, have the same sort of direct apprehension of what passes in other minds as they have of what passes in their own ? I cannot think so. My feelings may be guessed by my companions; but in the absence of some kind of mystical intercommunion they can be experienced only by myself. The possibility of such mystical intercommunion I do not wish to deny. But it is not this, I imagine, that the New Realists desire to recommend to our favourable notice.

§ 4

So far I have been concerned with the difficulties which beset our inevitable beliefs in the being and character of our fellow-men. But how about our own being and character ? I have been insisting that while "thou's" are known only by inference, "I's," on the other hand, are known immediately by intuition. One might be tempted in these circumstances to suppose that what we know intuitively we ought to know well, and that what is looked at from within should be clearly seen. Unfortunately this is not so. How many persons are there prepared to explain the nature of that self whose existence seems to them so obvious and so certain? What *is* an "I," an "Ego," a "subject," a "self-conscious personality," or by whatever other name, fitting or unfitting, it figures in ordinary discourse and in works on philosophy? Does it exist? What are we to say about its characteristics, its place (if any) in experience, its reality, its relation to particular mental phenomena such as thoughts, or feelings, its relation to such material things as the nervous system, its natural origin, its natural end, the stages (if any) of its development?

We are here in the presence of a philosophic situation not unlike that which confronted us when discussing the problem of the external world. In our ordinary moments, in the practice of daily life, neither mind nor matter, neither persons nor things, suggest difficulties as to the general character of the really existent. We accept them cheerfully, and ask no questions. But if compelled by the necessities of our argument we *do* ask questions, speculative mists immediately arise, and even the beliefs which remain inevitable lose much in precision of outline.

§ 5

In proof of this, consider for a moment the following example. I cannot doubt that I know something about myself—that, in other words, I am not only conscious but self-conscious. I am confident, again, that I am an enduring entity—in other words, that I have a past of which the present is a continuation, and a present which is always melting into a future. These are beliefs which I entertain without misgiving about myself; and I do not for a moment suppose that my case is exceptional. Formulated or unformulated such convictions are the common property of mankind. But will they bear critical examination—the unsparing application of " methodological doubt " ?

Take, for instance, the statement that I am a self-conscious being—that I have (at least some) immediate knowledge about myself. This to me is indubitable; but is it clear ? Let us suppose that I feel hungry. Whatever else this feeling may be it is certainly one of my conscious states. Is it necessarily also a self-conscious state? Do I never hunger without knowing that I hunger? Is there no element in the latter condition of mind which was not also fully present in the former? Even if the two conditions are distinguishable in thought, are they separable in fact? To me the answer which best harmonises with the immediate evidence supplied by introspection and memory might be indicated as follows:

Present feelings may certainly be part of a self-conscious state; that is, they may be recognised by me as mine, *while I am experiencing them.* This, however, seems far from being the invariable rule. When I interrogate memory I have no difficulty in recalling feelings, which I know with complete assurance were mine, but which, so far as I can recollect, were not realised as mine while they were still being felt. To be sure, if I had thought about the question I should immediately have known them to be mine. But I was so absorbed in the feelings themselves that there was not room, so to speak, in consciousness for self-consciousness, for the recognition of the fact that the feeling was being felt by me.

The " I," therefore, in which each one of us inevitably believes, is not always realised by us *as* a continuing entity through all our waking hours, much less through our hours of sleep. It suffers eclipse whenever consciousness either fades away or is strongly concentrated on some absorbing object or situation. As an element, therefore, in our experience its appearances are spasmodic, and its continuity through all our changing states, however certain, cannot be established by contemporary observation. It is true that the very act of recollection by which my past experiences are known carries with it the full assurance that they were *mine*—though on what the assurance is based is not, it may be, quite so evident.

§ 6

Sceptical empiricists, following Hume, would, indeed, not be content with the modest admission that our consciousness of a continuing self was broken and imperfect. They would say that no such self exists. If it does exist, where (they ask) is it to be discovered ? It is neither a sensation nor an idea ; we can neither see it nor feel it ; it is neither a concrete entity nor an abstract notion : though the contents of consciousness be explored to their remotest depths we never find it; though its name is for ever on our lips it vanishes into nothingness when we strive to close with it in thought.

For philosophers of this school an "I" would seem to be no more than a succession of mental states loosely held together by partial recollections of its own vanished fragments, but wholly without any enduring bond which could unite its diverse elements into one self-conscious whole. How, from dust like this, can man be formed? Can a procession of feelings, thoughts, perceptions, and memories constitute, singly or collectively, any tolerable substitute for the "I's" and "thou's" of common sense and familiar knowledge? These may defy description, but at least they compel belief; they may not satisfy the sceptic, but they meet the needs of life. Nor will the analysis which we owe to Hume and his successors provide us with any theory more agreeable to reason. Its results can hardly be expressed in ordinary language. Grammatical and linguistic usage is so saturated with "I's" and "thou's" that it is scarcely possible to dispute the ordinary doctrine without the help of phrases which imply that the ordinary doctrine is true. This, it may be replied, is the fault of language, not the fault of philosophy. Perhaps so. But the fault is so deeply rooted in the practice of mankind, that it is itself in great need of a philosophical explanation.

§ 7

Try, for example, and translate into terms that will conform to Hume's analysis some such declaration as this: "Since first we met, thou and I have always loved one another." I will not attempt the task, for in its integrity it seems to me plainly impossible. What the lover here implicitly assumes is exactly what our philosophic analysts explicitly deny. He asserts about himself that he loves—thus plainly distinguishing himself from his feelings. He implies also that while these feelings have been of no transitory character, yet he himself—the "I" that feels—existed before them, and exists independently of them, thus assuming his personal identity in the midst of change. What he believes about himself he evidently believes (*mutatis mutandis*) about the lady of his affections; and great would be his surprise were he informed that, inasmuch as, strictly speaking, there are no "I's" and no "thou's" neither he nor the lady can properly be said to exist as persons. Two minds we may indeed assume—minds in the shape of more or less organised processions of mental events. But no such processions are capable either of constancy or love, however frequently amorous emotions may figure in their ranks. Mentalism of this type can never give us personality. Will materialism serve us better ? If the lover in our illustration shrinks from the notion that one procession of mental states can pay court to another, is he prepared to adopt the views which some modern realists have taken under their protection ? Will he substitute for the loves of two mental processions the loves of two material nervous systems ? Romance, perhaps, will suffer; but in exchange he may believe himself to have obtained what he greatly needed—a basis of psychical continuity solidly established on sound scientific data.

But will he ? Evidently (with all deference to psycho-physical idealists) my nervous system is not myself. It may be, and from the physiological point of view it certainly is, a constant member of all the varying groups of material causes associated with my states of mind. But, unless I perceive it, which is plainly impossible, it is never on any theory one of those states itself; and if it were, it would still not be me—a cause of "me" perhaps—but not me.

§ 8

I am aware that some distinguished philosophers even in our own day take a different view. Their description of mind is materialistic in the full-blown fashion which, when I was young, we used to call "crude." In their own opinion they and their nervous systems are one—a doctrine which I will not attempt to refute, for to me it seems not so much incorrect as meaningless. I understand, though I do not accept, the theory that every psychic state is completely accounted for by some physiological cause, so that mind may be treated as no more than a function of matter. I also understand the view that as every organism has a unity of its own, it may be expected to impress some kind of unity upon the collection of mental states which, on this theory, are its product. But that an "I" should not only depend on matter but *be* matter[1] is a doctrine which I am unable to comprehend, and cannot, therefore, venture to dispute.

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[1] I find it hard to put any other construction on much that Professor Perry says in "Present Philosophic Tendencies," ch. xii.

CHAPTER XI

THE SAME SUBJECT CONTINUED

§ 1

LET us, then, consider materialism in its more moderate form, the form which for many generations has, without important variations, commended itself as a working hypothesis not only to the majority of physiologists, but to thinkers of all schools who seek the explanation of the universe in terms of matter, motion, and energy. This theory, in its simple integrity, teaches that all mental events, whatever their character, are the result of physical events, while physical events are never the result of mental events. Mind may know matter, but cannot move it. Matter produces mind, but cannot know it.[1]

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[1] This is sometimes called epiphenominalism. It is the only one of the familiar theories dealing with the relation of mind and body (as body is understood in physics and physiology) to which I need refer. The doctrines of " pre-established harmony," " occasionalism," " automatism," " psycho-physical idealism," etc., belong rather to the history of philosophy ; and though perhaps more interesting, and due to men of greater speculative genius, are less relevant to our immediate purpose. They have at least little relation to common sense

Now no one is likely to deny the superficial plausibility of this theory from the point of view adopted by the natural sciences. As we saw in an earlier lecture, perceptions are regarded—I think inevitably regarded—as mental effects produced by physical causes, among which are always to be found not only the object perceived but the perceiver's organism. In addition to this the whole trend of physiology requires us to admit a minute correspondence between changes in the nervous system and changes in our emotional and intellectual condition. Character, it seems, is intimately affected by the chemistry of the ductless glands. By drugs pain can be largely controlled, and consciousness temporarily suspended. Mental power grows with the growth of the body, and decays with its decay. In short, the action of matter on mind is a commonplace of science, as well as the familiar assumption of common sense.

Yet it cannot be said that common sense is materialistic, for it firmly refuses to press these doctrines to their natural conclusion. It admits that matter acts on mind; that mental effects are closely connected with physical causes; but it would never deny that mind acts on matter, and that physical effects are often due to mental causes. It is an unshakable conviction of every "I," at least in his unphilosophical moments, that he can, of his own free will, lift his arm, use his legs, move his furniture, cultivate his garden. Such beliefs are universal. But if they be true, then must we abandon the idea that the physical world is a self-contained system, governed only by dynamical and mechanical laws. On the contrary, the course of material nature is plainly modified by the purposeful intervention of mental influences. And as this is what most people mean by a miracle, it would seem to follow, not merely that miracles are of constant occurrence, but that man's main occupation is to perform them!

There is here a profound divergence between the instinctive beliefs about voluntary action entertained by all mankind, and certain theories inevitably suggested by the progress of physiology and physics. The two ways of looking at the relation of man to his environment, though sometimes entertained by the same person in different moods, cannot really be reconciled. Take a simple case. I suppose myself to be winding up my watch. It is admitted on all hands that when this operation is concluded a certain redistribution of matter and energy will have been effected. In particular the mainspring will have changed its shape, and will again have become a reservoir of useful power. By what agency will all this have been accomplished ? I, at least, who am, by supposition, the hero of this domestic episode, have no doubts on the subject. I know that I purposed winding the watch ; I know that I am freely carrying out my intentions. I know, in other words, that a continuing mental entity is occupied in deliberately modifying the course of nature, and that this entity is myself.

§ 2

Thus do all men think when they are not engaged in explaining the universe. But when they take to speculation, a new preoccupation is apt to seize them. They become acutely aware how difficult it is to reconcile our natural instincts about the action of mind on matter with certain views concerning the relation of matter to mind, born of the desire to extend to the utmost our scientific generalisations about the physical universe.

With this desire, and with the theories to which it has given rise, many of us may sympathise even when we differ. With all their defects they make for continuity; they simplify our conception of the world of matter, life, and mind; and they relieve us of the necessity of supposing that late in time—i.e. long ages after the earth was formed—our corner of the cosmos was suddenly invaded by influences, new in kind and incalculable in direction. These various claims, or, if you prefer it, these three aspects of a single claim, are in themselves attractive, and I do not wonder that some thinkers refuse, almost with passion, to acquiesce in their abandonment. But consider for a moment the cost of their retention. It is not merely that with the growth of biological knowledge the difficulty of explaining mechanically the infinitely complex adjustments of organic life seems to increase; that the facts of maintenance, repair, and reproduction, the appearance of purpose at every turn in the history of living beings, take us into regions far beyond the limits of physics and chemistry. The problem of personality lies deeper even than these, and the implications of materialism are more destructive. For the materialistic solution involves the abandonment of all effective belief in ourselves. It treats the conviction that "I act" as a delusion; not because what "I" do is predestined, but because, so far as the external world is concerned, "I" in truth do nothing. Mind is still permitted to exist—but only as the impotent shadow of matter. Always effect and never cause, it reflects, imperfectly enough, a world whose lightest atom it is powerless to direct. Not by a hair's breadth does the universe change its course for all the struggles of deluded men. They may feel and they may know; that is to say, among the successive epiphenomena of which (according to this type of materialism) their minds consist, may be states of feeling and states of knowing. But all doing is performed for them by matter, and solely according to the physical laws which matter obeys.

But can they even know? Is knowledge possible for such ill-compacted collections of mental events as on this theory constitute "thee" and "me"? Granting that within each collection many particular states of knowing are to be found, can any quality of knowing be thereby infused into other members of the group? "Thou" and "I," mere nouns of multitude as we are, have no true unitary character; neither can we be converted by a nervous system, however admirable, into self-conscious personal "selves."

§ 3

Before leaving this materialistic theory of "I's" and "thou's" let us apply to it the test which plays so important a part in our general argument—the test, I mean, of comparing the causes by which beliefs are supposed to be produced with the reasons for which they are supposed to be entertained. In the earlier chapters this test was employed, in connection with sense perception and our beliefs about the external world. The question I then put was to this general effect—given the web of causes and effects which, according to modern science, begins in the world of electrons[1] and ends in our perceptions of "gross" matter, how (I asked) can this be made to harmonise with the web of premises and conclusions which starts with our common-sense perceptions of "gross" matter and ends with our beliefs about imperceptible electrons? How are we to reconcile the results of two procedures, neither of which we can afford wholly to abandon?

Our present case is somewhat different. The causal process with which we are now concerned, though complicated, is brief. It has its beginning in the nervous system and its end in mental events, which, on this theory, the nervous system somehow throws off without any expenditure of energy as an unexplained by-product.

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[1] Cf. note, Ch. VI, p. 116.

On the other hand, among these mental events are, or may be, beliefs about their own origin—say, in the grey matter of the brain. Thus, according to materialism, neurons blindly make mind, while mind, thus unintelligently created, may, and sometimes does, investigate neurons. Surely a very singular example of the division of labour!

Let us, now, bring these two operations, the operation of making knowledge and the operation of knowing, a little closer together, and see how far, if at all, they can be fitted into a coherent scheme.

Observe, to begin with, that the philosophic situation I have just described is beset with every difficulty which we found in the theory of sense perception, and with difficulties in addition which are all its own. When dealing with perception we assumed a perceiving person, an active, intelligent, self-conscious unity, one of a world of "I's" and "thou's," an entity which might believe and doubt about many things, but was not called upon to doubt about itself. The causal process we were then considering had to do with the production of beliefs, not with the production of believers, with knowledge, not with knowers. The " I " was not treated as a psychical effect, but as an entity for whom psychical effects (such as perceiving and feeling) might be said to exist. Not so in the case of the causal process now under discussion. This has a different origin and runs a different course. It begins in the nervous system; but the end product (which happens also to be the immediate product) consists of psychical effects which leave no room for an " I," even if an " I " was not, by hypothesis, eliminated.

§ 4

When, therefore, we turn from the causal to the cognitive process, from making to knowing, the entity which is supposed to know is not an " I," but certain loosely connected elements in a mental group; and among the things they know about is the part played in their own production by physiological action within the brain. To be sure, this knowledge is at present of the slightest and most schematic description. But this, after all, does not affect the argument. Were our knowledge a thousandfold greater than it is, could we trace every minutest chemical or physical change that takes place in the nervous system of the living subject, the general problem would be no nearer a solution than it is at present. For the difficulty is due to the fact that, on the theory we are discussing, the physical and chemical changes which produce intelligence are not themselves intelligently guided. We are required to deny that matter at any stage of evolution is moved by reason or influenced by purpose. The causes of our beliefs must, therefore, be regarded as non-rational, whether they be remote or whether they be proximate. With the remote causes, indeed, we are not now concerned. They must first have come into operation when the world was young, before matter gave birth to life, or life flowered into reason. But it has to be noted that reason since then has, on the materialistic hypothesis, run no independent course. None of our beliefs are due to it. They are, by supposition, mere epiphenomena, the product of nervous changes, which themselves obey only the laws of matter. And since there is no ground for supposing that purely non-rational causes will issue, except by accident, in anything but non-rational effects, and since the materialistic dogma we are discussing is itself one of these effects, materialism is a creed which by its essential nature destroys its own supports. The more convinced we become of its sufficiency, the weaker are our reasons for believing it.

§ 5

But because the theory of materialism is wrong, dare we believe that any of its rivals have as yet shown themselves to be right? These rival theories are many—contrived by men of infinite ingenuity and speculative courage. They have approached the subject from every quarter, and have drawn inspiration from every source. Among them they have laid under contribution the teaching of physiology, psychology (experimental, introspective, and social), "psychical research," mental pathology, epistemology, metaphysics, and mysticism. Their efforts have not been lacking in boldness, nor their results in variety. Some, as we have seen, think the "I" is an illusion, others that it is indestructible and immortal. Some think it is simple and unitary; others that it is a molecular structure formed from atoms of mind-stuff. Some think mind no more than the shadow of matter; others treat matter as no more than a construction of mind; while yet a third party regard them both as parallel appearances of some profounder reality, simultaneous shoots from one deep hidden root. By theories like these, and by others not less subtle, philosophers have established the difficulty of the subject, even if they have established nothing else. None of them, I have to admit, leave me satisfied; none of them supply what is required by a "philosophy of the familiar," or give us that of which we are in search.

§ 6

I cannot say how the gap should be filled, but I can mention some doctrines, besides materialism, which seem to me quite unfitted to fill it. Among these I should include, as you already know, all theories which deny that we are personal and that personality involves the existence of a psychical element, which is unitary and enduring. I do not, of course, mean to suggest that because it is psychical it must therefore be independent of the body, nor that because it is enduring it must therefore be immortal. I merely mean that an "I" stands for something more than a series of events, be they mental or physical or both.

But for what more? Are we, for example, to be content with the "Subject" which philosophers of importance regard as essential to any tolerable theory of knowledge? There must be a Subject (it is said) which knows if knowledge is to be possible. There must be a "centre" of feeling if feelings are to be my feelings or yours. There must be a thread binding experiences together if experiences are to form a connected whole. I myself regard general statements of this type as implicitly contained in our familiar creed. They are acceptable as far as they go. But how far is that? "Subject" is a technical term which in one of its senses is applied to an entity of which scarce anything can be said except that it is the correlative of "object." "Centre" and "thread" are geometrical or physical metaphors intended to suggest a principle which supplies cohesion and continuity, though nothing more. But is an "I" to be regarded merely as glue? Has it no function but to hold together a succession of psychical events which could crystallise as naturally round any other centre, or be strung as suitably on any other thread? If so, it would seem that the enduring element in "Selves" has neither individuality nor character. "I's" are as indistinguishable as bottles made of the same material and cast in the same mould, differing only in respect of the liquor which, as chance determines, they happen to contain.

This is plainly insufficient. But it will perhaps be replied that the "I's" of ordinary discourse should be likened to the full, not the empty bottles. We are not merely "subjects," "centres of consciousness," "threads of continuity"; we are subjects plus objects, centres of consciousness *and* the consciousness of which we are the centre, threads connecting mental events *and* the mental events connected. As my philosophical readers will easily perceive, we are here on the very edge of the venerable controversy which has long raged, and rages still, round the metaphysical notion of "substance." I do not propose to venture further into it than I can help. For my concern is with familiar beliefs, and speculations about the metaphysic of substance are apt to leave familiar beliefs very far behind. I may, however, be permitted to hazard one or two observations which keep well within the limits of the present argument, while closely touching its most important issues.

§ 7

The point, as I see it, is this :—having rejected the idea that an " I " can be successfully treated as merely a succession of mental events ; having convinced ourselves that we cannot find in the nervous system either a substitute for a unitary mind or a mechanism adequate to the task of welding mental events into a self-conscious person ; are we satisfied that this operation can be accomplished by a " Subject " which, in itself, appears to have no qualities or characteristics except that of unity, and (if it be not, as many think, above and beyond Time) of continuity also ?

My own view is that it cannot. In order to constitute a person we require, it seems to me, something more than a unifying principle relating mental events to each other and to itself. An " I " must have character quite apart from the experiences, active and passive, which fill his conscious life. He must have (or be) a soul—a soul which is something more than an organised collection of capacities, or a procession of psychical states—a soul which is not merely substance, but has an individuality which is unique and indescribable.

It is to this " soul " we refer when we say that we are certain of our own existence. It is this "soul" that remembers the past and expects the future. It is this soul that hopes, and this soul that fears. What are hopes and fears to what is no more than a "Pure Ego of Apperception"? How, on the other hand, can a feeling which perishes with the passing moment be rationally and significantly said to anticipate pleasure or pain? No doubt feelings of anticipation are most familiar emotions. But it is anticipation of what is going to befall the Self, not of what is going to befall the anticipation, or even the pure ego! Hope, for example (if I may repeat and emphasise the same thought), is doubtless a present pleasure; but its whole meaning depends on its reference not to present but to future satisfaction. Whose future? Whose satisfaction? That of the Subject as Substance? of the (perhaps) timeless entity which is the bare correlative of all our experiences? Obviously not. Then is it a satisfaction felt by one of those experiences? Again obviously not. An experience may *give* satisfaction, but cannot *enjoy* it. Here, therefore, we have to do with some third thing—perhaps with what certain philosophers have chosen to call the "Empirical Ego,"—but, in any case, with a soul, a Self, an "I," whose fate concerns each one of us, which *is* each one of us, but is neither a metaphysical abstraction, nor a series of mental events, nor yet the simulacrum of a concrete unity obtained by riveting the events to the abstraction, and calling the product a person.

§ 8

This statement, I admit, leaves us face to face with ourselves, unexplained and undescribed. Though every "I" is for himself the most certain, the most central, the most obvious of beings, yet is he withal the most shadowy. Self-knowing though he be, his essence ever escapes him, and his limits are lost in twilight. He can neither lay down with precision the frontier which divides consciousness from sub-consciousness, nor that which divides self from not-self. The most familiar subject of belief remains, after all is said, among the most mysterious.

But if man be a mystery to himself, does no mystery hang over his relation with others? I insisted in a previous lecture upon the individualist character of all speculations of the kind with which we have been occupied. The doubts (I said) which we desire to resolve must always be somebody's doubts—mine, perhaps, or yours. The beliefs we desire to establish must always be somebody's beliefs, not belief in general. But while this seems to me obviously true, I must not be supposed to picture the world of "I's" and "thou's" as a collection of Leibnitzian monads eternally debarred from influencing each other, or as units limited in their methods of intercommunication to the employment and interpretation of ordinary sense data. There is surely more in human intercourse than this—though what that more may be, is a matter of doubtful conjecture.

§ 9

Yet in this connection it may be permissible to call attention to a speculation of Mr. Gerald Balfour,[1] partly suggested, I believe, by experiments in thought transference. Assuming, I think rightly, that for certain people and in certain circumstances, what passes in one mind becomes intuitively known to another by methods of which all we can say is that they are certainly not the methods through which we normally infer the thoughts and feelings of our neighbours, he suggests a generalisation of far-reaching interest. He supposes that telepathy—far from being a rare and almost incredible exception to ordinary laws—is as common as life. Consciously or unconsciously we are all, he thinks, capable of telepathically affecting others. On the plane of ordinary knowledge this explains much in human intercourse that is mysterious. With every extension of the principle to different levels of being, it inevitably gains in importance. If we hold that a single human body may be the home and instrument of other "psychic centres" besides the unitary soul in which both Mr. Gerald Balfour and I believe, we should expect that in normal conditions there would be telepathic co-operation between these different elements. If, with the pan-psychists, we regard matter as no more than the appearance of mind, then sense perception itself becomes a case of telepathy—an example of intercommunication between the living soul and the living atom. And, lastly, if instead of studying only the inferior grades in the hierarchy of being we look upwards rather than downwards, then telepathy may take on every degree of dignity and value, culminating at its highest in the mysteries of religious inspiration.

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[1] *Hibbert Journal*, April 1913, and *Address to the Society of Psychical Research* delivered six years earlier.

Whatever may be thought of this speculation[1] on its merits it is far removed, I must admit, from the level of our familiar beliefs. But, as I have so often insisted, the level of these beliefs is one on which we cannot finally remain —and it is in developing this conclusion and recapitulating the arguments leading up to it, that I propose to occupy the concluding portion of the present Course.

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[1] I refer to it again in the Epilogue.

PART IV

CHAPTER XII

SCEPTICISM. DIFFERENCES AND AGREEMENTS

§ 1

YOU will probably by this time have had your fill of "methodological doubt"; and for my part I am ready to admit that, though the uses of this particular instrument of investigation are by no means exhausted, my general argument would hardly be strengthened by its further application to our familiar beliefs. Successfully or unsuccessfully methodological doubt has done its work, and it only now remains to extract from its results what positive conclusions they may seem to justify.

Before doing so, however, I must make something in the nature of a personal defence. There are high authorities to whom this whole method of dealing with a great subject is frankly repulsive. Two among my recent colleagues on the Gifford Foundation, both of them philosophers of the greatest distinction, both of them critics most friendly to myself, have condemned it; and both have condemned it as an offence not merely against sound doctrine, but against the best canons of philosophical propriety. Its critical method they could perhaps have forgiven; its constructive intention they would, I believe, have approved. The error attributed to me consists, I gather, in the effort to combine the two. I am charged with endeavouring to rest faith upon scepticism, and seeking foundations for belief among the quicksands of philosophic doubt. This procedure they treat as a perilous attempt to disparage reason in the interests of religion—an enterprise which they justly regard as equally injurious to the credit of both.

But surely there is here a singular misconception. There have been mystics endowed with gifts of spiritual intuition which gave them, as they believed, immediate access to the loftiest realities. Of these seers, or of some of them, it may perhaps be said that, having found a better way, they rate discursive reason lower than it deserves. But I am not of their number. Though I do not undervalue their gifts, I have never pretended to share them. The humbler method, so well praised by Mr. Russell, which I endeavour to practise, is laboriously, even ostentatiously, different. It deals in argumentation almost to excess. It aspires to apply the test of rational examination to the most privileged assumptions. Neither the authority of science, nor the consentient belief of all mankind, nor the individual opinions of eminent philosophers, are permitted to confer immunity or paralyse criticism; and if criticism shows that the duty of rationalising beliefs has so far been most imperfectly performed, remember that this conclusion is itself the work of reason. If reason be on trial, it also presides over the Court. In its own cause it is at once defendant, plaintiff, advocate, and judge. How then can it suffer wrong?

It may perhaps be replied that, whatever be the intention of my arguments, this is not the light in which they will be regarded. They will be supposed to teach that whether we be dealing with science or with superstition, reason is equally negligible; that it fails to support the first, that it cannot destroy the second; and that as nothing can be reasonably proved, even religion may be reasonably believed. This is "barren scepticism" indeed; but it is no doctrine of mine. Though the method I follow be often critical in form, it leads, I think, to conclusions which, however tentative and provisional, are none the less constructive in substance and rational in method; conclusions which (it may be parenthetically observed) are by no means poles asunder from those that, in very different fashion, my distinguished critics have themselves so eloquently advocated.

§ 2

On this method something more must be said before I conclude. But having now, I trust, cleared away these preliminary misunderstandings, let me return to the material on which we have been chiefly working—namely, the general body of our familiar beliefs.

One result of our exploration has been to show that although, if we dig deep enough, we may here and there reach rational certitudes, we shall more often be brought up against "inevitable convictions" and "intuitive probabilities" to which rational certitude can by no means be attributed. Though these two kinds of belief merge into each other by insensible degrees, it is convenient, I think, to distinguish them; so that we may compare beliefs which are inevitable with those that are axiomatic, and beliefs whose probability is a matter purely of intuition with those which, at least in theory, could be dealt with by the calculus of probabilities.[1]

Our main concern, however, is with the beliefs which are inevitable or intuitively probable. They have, so far as I know, received scant attention, if any, at the hands of philosophers; and Dr. Davidson, referring to my treatment of them[2] in a very friendly notice of my first Gifford Lectures, regards my views on them with little approval.

Now whether they have any speculative interest is, I admit, a matter for argument. But whether they do or do not exist is surely no more than a simple question of fact. And are the facts denied? Can anyone doubt that in our creed of common knowledge are many beliefs of crucial importance, which no competent thinker would call self-evident, but which, proved or unproved, it is in practice impossible for us to abandon? Do we not, for example, believe ourselves to live in a world of men and things; a world extended and enduring; a world where, within limits, we are free to act; a world where at least some degree of regularity prevails; where memory supplies some knowledge of the past, and probability offers some guidance for the future? So far, if no further, the whole human race is compelled to travel in company; the wise with the foolish, the learned with the ignorant, the latest product of the schools with the most primitive and ignorant of barbarians. In the ranks of this army are to be found some who grumble, but none who desert. Even he who proclaims aloud that the world of sense is mere illusion, treats it in practice as the sternest of realities. Even he who holds that his every action is the inevitable result of physical laws, never questions in practice that at a given moment he can "freely" decide whether he shall shut the window or leave it open. Even the sceptic who resolves all experience into a mirage of sensations and ideas, never doubts in practice that he is a person among persons, distinguishable from his own sensations and ideas, with a continuing existence, in a material environment, which is itself as solid, as durable, and as independent of perception as common sense or the "new realism" is able to make it.

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[1] See Appendix.

[2] Croal Lectures, 1921.

Now it seems to me clear that this body of beliefs is inevitable, but I have spoken in vain if my hearers still consider it beyond the need of proof. I do not, of course, deny that there are beliefs which may justly claim to be self-evident. But these are not among them; and no better indication of the fact can be given than the list of subjects referred to in an earlier lecture on which Mr. Russell, like myself, entertains ." methodological doubts." These include, explicitly or implicitly, most of the beliefs which I have just enumerated. As you may remember, he wants to know on what grounds we suppose that other people exist; that testimony is a valid source of information; that there is an independent material world; that, if there be, it is of the kind required by science, obeying in some sense or other the law of universal causation. He even entertains doubts, or did in 1914, as to his own existence. This is a comprehensive list, and it will, I think, be admitted that if such things be dubious not much of our familiar creed is solidly established.

§ 3

Facts like these suggest some curious speculations. We are apt to dwell on the variety of opinions which divide mankind, on their passionate disputations over trifles, on the multiplicity of their superstitions about the unseen, on their fantastic explanations of things constantly before their eyes. But are not their agreements stranger than their differences?

And are they not, from a philosophical point of view, even more important and suggestive?

There is nothing curious in uniformity of belief when reason dictates the doctrine. For truth is one, and it is the business of reason to find it. But since the wanderings of unreason are potentially infinite, how comes it that men approximate so closely to each other in their familiar creed, seeing how imperfectly as yet that creed is rationalised? Why do all men follow the same course, seeing that they do not steer by the same stars? If reasoning be not the ground of agreement, where is that ground to be discovered?

Perhaps it will be said that, after all, reasoning *is* the ground. Does not every man, when asked why he holds this or that opinion, make it a point of honour to produce an answer which may pass as reasonable? What more can he do? What more can he be asked to do? Nothing more, I reply, if his investigations go to the root of the matter. But how often is this the case? We must remember that in ordinary life any answer is treated as sufficient which successfully appeals to facts and principles accepted by all the parties to the discussion. And this is as it should be. In no other way could the business of the world be carried on. A community that spent its time in hunting for first principles is a community that would certainly starve. But what is sufficient for daily life is quite insufficient for philosophy—even for a philosophy of the familiar. It is just when we have done the best we can with the facts and principles which are generally accepted that our difficulties really begin ; it is then, as I have endeavoured to show, that "methodological doubt" steps in, asks inconvenient questions, and presses in vain for a reply.

It seems therefore that the remarkable agreement which prevails with regard to our familiar beliefs has little to do with reasoning. This is curious. But not less curious is the disagreement which immediately declares itself when reasoning is used either to establish these familiar beliefs or to transcend them. They appear to constitute a set of middle principles, *media axiomata* in Bacon's phrase, very defective in their theoretical ground-work, very ill-fitted to support the weight of a constructive philosophy, yet seemingly sufficient for us all in our uncritical moments of action or repose. But there are other moments than these. Reflection claims its dues, and with reflection come difficulties and differences. About the foundations of knowledge (assuming that they can be found), about the higher realities (assuming that they exist) there has never been agreement. It is only on the uncritical level of ordinary practice that anything resembling harmony can be said to exist.

§ 4

No better illustrations of the fact can perhaps be found than those which are supplied by our discussions on such great commonplaces as the reality of the external world and the true being of those who dwell therein. We have seen that the most famous attempts to deal with these underlying problems exhibit divergencies so profound that we might sometimes be tempted to ask whether the illustrious disputants were talking about the same universe. Indeed, if you seek a parallel to the differences which divide experts about things material, you must look for it in the ecclesiastical disputes about things spiritual which haunted the great ages of dogmatic construction. Even then you will perhaps be disappointed, and may find to your surprise that the mysteries of matter have proved themselves more fertile in heresies, more refractory to a purely rational treatment, even than the mysteries of "faith."

And have we found ourselves better off when we turned from things to persons? Was it not abundantly plain throughout our discussion on "I's" and "Thou's" that high authorities are even further from agreement about psychical subjects than they are about physical? I hazard the suggestion that there is not a single important assertion to be made about the true nature of the Self which would, at the present moment, obtain the assent of all instructed thinkers.

When dealing in earlier Lectures with "things" and "persons" I have, however, already said enough about the variety of views which prevail among experts on these all-important themes. Let us then turn to Time, about which I have done little more than indicate some of my embarrassments. If on this subject philosophers have expressed fewer differences than on mind or matter, this is not, I suspect, because their differences are less profound, but because fewer differences seem possible. The empirical school, so far as I remember, have been almost silent. They have accepted the opinions of common sense with an easy acquiescence they have never shown in the case of mind, space, matter, or causation. On the other hand, the most famous metaphysical systems, and the habitual language of mysticism in all ages, agree in treating reality as timeless—a view which is perhaps in more violent contradiction to common sense than any of the theories about the external world to which I have referred. Nor does Kant's variation on this metaphysical theme, though contrived in the interests of scientific and mathematical knowledge, in the least agree with the general beliefs of mankind. That Time and Space are " forms " contributed by human sensibility to the timeless and spaceless reality of an unknowable thing-in-itself, is not a doctrine which the plain man will ever take the trouble seriously to consider, even for the pleasure of thereafter declaring that, in his opinion at least, it is not worth considering.

In singular contrast to the Kantian view of Time is the Bergsonian view of Duration. While for Kant Time is no more than one of the various moulds—sensible and intellectual—into which reality must be poured before it can be known, for Bergson Duration is the most essential attribute of the "vital impulse" which drives the unresting universe to ever new developments along lines of evolution which are unforeseen and unforeseeable. Nothing can well be more subjective[1] than Time as conceived by the first of these thinkers, or more objective than Duration as conceived by the second. Mr. Russell, on the other hand, is (very rightly) preoccupied with the difficulty of bringing time, as he conceives it to be given in experience, into some shape susceptible of the mathematical treatment required by the physicist. His views about it are as remote from those of M. Bergson as they are from those of Kant; but not on that account much closer to common sense. According to him his "private time" is a purely personal possession. Some method must therefore be discovered whereby "private time," as immediately known to you and me, can be fused into universal and objective "clock-time." On objective "clock-time," until recently, both the instructed and the uninstructed among ordinary mortals have been wont to pin their faith. But the new developments of the doctrine of "relativity" seem to have introduced metaphysical discord even into the central harmonics of mathematical physics. It is not philosophers alone who now find themselves somewhat perplexed about the fundamental verities of time and space. The infection has spread to physicists and astronomers ; nor is it likely to be again brought under control without much technical discussion, in which I am fortunately not expected to take a part.

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[1] I do not suggest that Kant would have liked this use of the word.

Returning to the philosophers, it may be observed that of those who have special views on Time and Space, some treat these great entities on parallel lines, while some find little or no analogy between them. Kant, as everybody knows, is an example of the first class. His views about Time bear the closest resemblance to his views about Space. He runs them, so to speak, in double harness. M. Bergson is a brilliant example of the second. For him there is little or nothing of importance that can usefully be said about Space which can usefully be said also about Duration. Space is static ; Duration is dynamic. Space, metaphorically speaking, is the waste place where lies the refuse thrown off by the process of " creative evolution." Duration, on the other hand, is the principle of creative evolution itself. Professor Alexander again, like Kant, puts Space and Time on an equality ; but he makes them play a very different rôle in the cosmic drama from that assigned to them by the earlier philosopher. For him they do not contribute to the forms which substance must assume before it can become an object of sensible experience. On the contrary, they are substance itself. Space-Time, or Space and Time interfused, is the stuff of which all else is made—matter, mind, God. Nor, if I rightly understand him, are Space and Time to be regarded as in the full sense separate entities. Time is to Space much what, in his view, mind is to body; they are distinguishable but not different. Space cannot exist without Time, nor Time without Space. If we would rightly think of them, their essences must neither be confused nor divided. *They are* (or *it is*) not Space *and* Time, but Space-Time—a subtle and interesting doctrine, which I trust I have not misrepresented; though very conscious how easily the commentator on such a theme may, with the best intentions, lapse helplessly into heresy.[1]

§ 5

Before dismissing the subject of philosophic differences about familiar beliefs, let me add one word about causation.

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[1] I do not think (though I speak with hesitation) that Professor Alexander's Space-Time is identical with the "four-dimensional continuum" which plays so large a part in the modern doctrine of Relativity.

Causation would seem to be a notion so eminently necessary for any comprehension of this changing world that some clear understanding about it ought long ago to have been arrived at. All our inferences about the past and all our anticipations of the future apparently depend on it. All scientific discovery implies it. Without it the " order of nature " could hardly exist, or, if it existed, could hardly be understood. In some shape or other it is assumed in every scientific investigation and acted on in all the practice of life.

Yet what fundamental disagreements lie hidden behind this apparent unanimity ! There have been great schools of philosophy who treated the relation of cause and effect as one of identity in difference ; so that for them there can be nothing in an effect which did not preexist in its cause. Some again have thought that causation was no more and no less than invariable sequence ; so that for them a cause does not produce its effect, it only precedes it. If the relation between human effort and human action is more than this, or appears to the agent to be more, it supplies us with no illuminating analogy. Material Nature at all events exhibits nothing that resembles effort. Force is a brief expression for mass acceleration.

To suppose the contrary is mere anthropomorphism.

The merit claimed for this last view of causation is that it describes the kind of order which actually prevails, and the kind of rules which are actually obeyed, in this universe of unceasing movement. It professes to represent without fanciful additions the pure teaching of experience. But, curiously enough, there are other lines of thought, also professing to depend on the pure teaching of experience, which lead to quite different conclusions. Philosophers are to be found who detect all sorts of difficulties in the attempt to break up the continuous process of Nature into causes which are followed by effects, and effects which are preceded by causes; who are driven by their own dialectic to assert that the very notion of cause is so obscured by confusions that it should be banished from science; who think that the law of causation is neither an axiom nor an empirical truth; who hold that the order of Nature should be described not in terms of cause and effect, but by means of differential equations which ignore the very notion of succession, and draw no distinction between before and after, between antecedent and consequent, between that which is past, that which is present, and that which is to come.

CHAPTER XIII

COLLECTING THE THREADS

§ 1

AT this point the reader may be inclined to think that this catalogue of philosophic differences, though far too short for completeness, is already too long to serve any useful purpose. The mere enumeration of discordant views for no obvious purpose but to show that discordant views exist, may seem but a profitless undertaking. Let it be granted (he will say) that philosophers have always differed, that they differ still, and that there is no very convincing evidence that they will ever agree—what then ? They are within their rights in disputing. The rest of mankind is within its rights in ignoring their disputes. Is anything gained by dragging their differences out of the decorous privacy of learned treatises, and parading them before a world already sufficiently bewildered by the clamour of contending creeds ?

But surely if the world really thinks that these speculative differences amid practical agreements are without interest or significance it greatly errs. Obviously they are not the product of perverse ingenuity, or a morbid desire to surprise or shock. They are neither trivial nor accidental. Rather must they be regarded as due to conditions affecting us all, and producing a situation whose strangeness is dimmed only by its familiarity. But strange the situation certainly is, and well worth a moment's consideration.

The most plausible explanation of it, on purely naturalistic principles, is one with which we have already had to deal. It consists in an appeal to the general principles of Natural Selection. It may be argued "that our familiar creed is to be counted as one among the many valuable contrivances gradually evolved for the advantage of the race. It is familiar because it is general; it is general because it is useful. With or without reason, but in any case independently of reason, its elements have in the course of ages obtained the measure of credence which makes for survival. Those beliefs which are necessary for that end tend to become 'inevitable'; those beliefs (or kinds of belief) acquire some degree of 'intuitive probability' which on the whole incline to man's advantage in the struggle for existence.

Through this purely causal process a sound, working, everyday creed becomes, like eyes and ears, the possession of every normal man. It may be ill contrived to resist critical assaults. We know indeed that it is. But is this of the least importance ? The fact may reflect little credit on philosophy. But philosophy, be it critical or be it constructive, is after all the luxury of a few. It has no survival value ; it may possibly hamper useful action ; it certainly adds nothing to useful knowledge. We cannot therefore complain if, judging by results, we find ourselves poorly provided with the means of cultivating it with credit. We were fitted by Nature to eat, drink, multiply, and fight ; not to split hairs over subtleties that hardly concern us. No wonder that few attempt the task, and that those who do can boast few acknowledged successes. We may admit that essential truth escapes us. We may suspect that the superficial convictions by whose aid an unthinking world performs its daily round are confused, unproven, perhaps inconsistent. But Nature knows her own affairs ; the daily round is in fact performed. Why should we ask for more ? "

Now this may be, from some points of view, a sufficient explanation of the fact that men agree so well about conclusions which are essential to practice, and so ill about premises which are essential to theory. It may be good science. It may be a valuable contribution to the natural history of our race. It may be a suitable account of instinct. But it deals only with the causes of belief; and though among other causes it refers to reasons and to reasoning, this is merely for the purpose of disparaging their authority and drawing unfavourable comparisons between their influences and those due to the lower utilities favoured by selection. Evidently it does less than nothing towards maintaining rational values.

§ 2

Perhaps it might be argued that the beliefs which are " inevitable " or " intuitively probable " are really akin to instincts, and may be treated in the same way. Like instincts they serve the practical interests of the species which possesses them. Like instincts they appear with singular uniformity in different individuals. But though these resemblances are far from negligible the differences are vital. Instincts do no more than inspire particular actions on particular occasions. Beliefs, on the other hand, have always a speculative aspect, they tend to coalesce into conceptual pictures, true or false, of reality. And while animals, including man; accept their instincts as they find them, man is never content with his conceptual pictures. He ever strives to extend their boundaries, to smooth their inconsistencies, to systematise their contents, to rationalise them, if only by fragments. Even the most backward races, I imagine, show some curiosity which is not due to fear or appetite, some inclination to theorise rooted in intellectual interest. But however this may be, it is surely true that men rarely forget, and animals never realise, how small is the field of reality that lies open to their gaze, how faintly illumined, how closely hemmed in by surrounding shadows. Always are they driven by some haunting impulse to round off the narrow map of the world they see by adding to it vast regions, material or spiritual, past or future, which they imagine or infer. Animals, who draw no maps, have no such needs; and, could they formulate the philosophy of instinct, would doubtless declare themselves uncompromising agnostics.

§ 3

But though nothing is more obvious than that men constantly speculate and reason, it must be acknowledged that speculation and reasoning have little to do with their most central convictions. These elements of their working creed, or some of them, are obviously settled for them in the nursery; grafted on their inherited aptitudes by teachers who are neither philosophers themselves, nor embarrassed by any great regard for those who are. The difficulties which meet us when we critically consider memory, perception, and self-consciousness, the cloud of perplexities which gather round our most assured convictions when they are coldly scrutinised, trouble them not at all; nor do they even suspect that man lives by beliefs which require proof but rarely obtain it, beliefs which are in any case held with a degree of certitude far in excess of anything which the proofs as yet discovered would seem to warrant.

We may well feel some surprise when we contemplate the results at which we now seem to have arrived. Here are plain men acknowledging without reserve the authority of reason, though depending in the conduct of life on beliefs which are largely unreasoned. Here are philosophers accepting in practice the familiar creed of all the world, though rarely able in their hours of reflection to agree about its foundations either with the world or with each other. Here are men of science, paying small heed to philosophers, justly boasting their reverence for experiment and observation, but as yet without any theories of induction and verification which do not assume a world of the very kind which presumably it is their business to establish. Here is naturalism finding the ultimate origin and explanation of man and his beliefs, his reasons and his ideals, in the unthinking processes of physical and organic evolution. And, most wonderful of all, here are the beliefs, reasons, and ideals of which all these disquieting things can be said, which nevertheless are true, or, at the least, are leading mankind on the way to truth! How, we may well enquire, can materials like these be welded into anything which in the least resembles a coherent whole?

§ 4

My own attempt to deal with the problem is well known to you. I expounded it, not for the first time, in the opening lectures of the present Course; and in all our wanderings over the fields of familiar beliefs it has never been far beyond our ken. It bids us abandon naturalism, with all its negations, and substitute for it a theory which teaches that reason and purpose play their part in the whole process of belief production. It requires us to reduce the physical world to a subordinate position in the universe of being. Nature we must treat not as the source of intelligence but as its instrument. Theism, in some form or other, we must regard as an essential support of our "familiar creed"; neither to be tossed aside as an irrelevant superstition, nor respectfully buried in an edifying footnote. If intellectual values are to be maintained the reality of spiritual guidance thus becomes, in my view, the most important of our fundamental assumptions.

And this for two closely related reasons, or, if you prefer it, two aspects of one reason, which, separately or together, have often been referred to in the preceding pages, though not always explicitly distinguished.

The first of them is based on the incongruity between knowledge as it exists among men and the humble origins to which naturalism traces it. But incongruity, though a convenient word, is, in this connection, an ambiguous one. The fact that in the order of natural causation we may trace back the pedigree of Newton's beliefs (as of yours or mine) through a period in which the nearest approaches to intellect were the mindless reactions of unorganised protoplasm, till we reach in imagination a yet remoter past when mindless life itself emerged from lifeless mechanism, may suggest to some a quasi-æsthetic incongruity. But, after all, the time has long gone by when the sentiment of human dignity was outraged by any scientific conclusions about the ancestry of man. The difficulty which at the moment concerns us has to do, not with man's place *in* the universe, but with man's beliefs *about* the universe. It is not sentimental, but rational; and arises from the fact that, according to Naturalism, these beliefs must in the last resort be counted among the purposeless products of physical conditions, which have no leanings towards truth, no aversion from error, no "tropisms"[1] of any kind to which, in default of something better, it would be possible for perplexed humanity to appeal.

Now, as I have constantly contended,[2] this is a position which is essentially incoherent. Its conclusions discredit its premises. The doctrines in which we believe throw doubts upon the truth-producing value of the process by which we have come to believe them. For we remember that these reasons are without exception not only reasons but effects. They all form part—a very insignificant part no doubt, but a part—of the causal web which constitutes the naturalistic universe. As effects they owe nothing in the last resort to reason or purpose. If snatches of reason and gleams of purpose occasionally emerge in the latest stage of the evolutionary process, this is but an accident among accidents. It neither removes our difficulty nor modifies its character. Everything we believe, we believe because in the order of causation blind matter and undirected energy happened to be distributed in a particular manner countless æons before man made his earliest entry on the cosmic stage. From this senseless stock, and from this alone, has sprung, according to naturalism, all that there is, or ever can be, of knowledge, practical or speculative, earthly or divine—including, of course, the naturalistic theory itself! How then can we treat it with respect? Whence come its credentials? The possibilities of error are countless. By what freak of fortune, by what gambler's chance, has it come about that these irrational influences have blindly but successfully shepherded mankind into the narrow way that leads to truth?

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[1] "Tropism" is the turning of an organism in a particular direction in response to a special stimulus. In the text it is of course used metaphorically.

[2] For the first time in "Philosophic Doubt."

This question indicates the central point of my argument in its first or causal aspect. It deals with beliefs collectively as parts of the general system of nature. It treats them as effects, as the products of a process whose stages need not be, and for the most part are not, intellectual in their character; and it shows how their values are damaged by any naturalistic theory of their origins.

§ 5

The argument in its second form is different. We leave causes and search for reasons. We do not discuss beliefs as effects, but (unless they are axiomatic) as conclusions; and we particularly enquire into the theoretical validity of the middle principles, the inevitable beliefs, and the intuitive probabilities by which we direct our practice. It is here that we make use of methodological doubt. It is here also that we are brought face to face with the comparative failure of philosophy to reach agreement as to the manner in which fundamental truths should be sought, or the terms in which they should be formulated.

I am well aware that we are now on delicate ground. In an earlier lecture I commented on certain ethical or quasi-ethical objections to my mode of procedure: and I doubt not that it will provoke further criticisms of more than one kind. I can imagine, for example, an objector speaking somewhat as follows: "You claim Theism as the necessary support of our familiar creed. But how is this device going to better our position? If Theism provided us with reasoned truth, while Naturalism left us the sport of irrational forces, who is there who would not be a theist! But can any such doctrine be extracted from your argument? Lecture after lecture of the present Course has been devoted to showing how little our familiar creed deserves to be described as 'reasoned truth.' Methodological doubt has been unsparingly applied, its conclusions have been presented with uncompromising frankness, and now, to complete this edifice of paradox, you require us to infer rational guidance from the universal diffusion of irrational beliefs! Surely from thorns like these no such grapes were ever gathered! Are we to introduce the Deity into our system of beliefs for no better purpose than to lay the sceptical ghosts which we ourselves have so gratuitously raised? Are we to rest our theology upon our incompetence, our insight into Reality upon our blindness to Appearance? Are we to find our best grounds for believing in God in our failure to find good grounds for believing in anything else? Are our spiritual fortunes to be wholly based on the bankruptcy of reason?"

I wish I could feel assured that no such commentaries were possible; for if at this stage of the argument they are made in good faith they reflect severely on my powers of exposition. But I am not without misgivings on the subject, and hesitate to treat my critic, imaginary though he be, with complete neglect. Let me therefore repeat the reply which in substance, and by implication, I have often given before:

Since belief, in the last resort, is a personal affair, every person may properly ask himself (though very few do) how his particular stock of leading beliefs was arrived at, and by what right he holds them with such serene assurance I have performed this operation to the best of my capacity in my own case, and have embodied some of the results in the preceding lectures. These results, I admit, have been inconclusive. But though inconclusive I altogether deny that they can properly be described as sceptical. The truth of our leading beliefs has been assumed throughout, and my only task has been to discover on what terms this great assumption (for great assumption it is) can. best be justified. So far from the argument being based on scepticism, it might be described with more plausibility, though not more truth, as based on credulity. With belief it begins, in belief it ends. And if doubt, as an instrument of research, has been freely used, it has been used for the purpose of finding the presupposition which may best contribute to the maintenance of those foregone conclusions. It must of course be granted that the Theistic framework ultimately postulated is tolerant of errors, absurdities, and superstitions. It supplies no guarantee of truth ; nor would such a guarantee be of much value if truth were taken in its juridical sense, as meaning the " truth, the whole truth, and nothing but the truth," as this appears to persons living under human limitations at a given level of human culture. We live in a world where knowledge grows, and, in growing, changes. The most we can hope for, the best we can conceive, is that " the inevitable beliefs," and the " intuitive probabilities " which constitute so important a part of our working creed, should be, as I have roughly expressed it, " true or on the way to truth." This is a doctrine which Theism can support; but strive as we may we shall hardly find foundations for it in naturalism.

Some may perhaps object that the argument in this, its second, form depends for its strength on the weakness of those who use it. "You postulate" (the objector may urge) "Divine inspiration to supplement human incompetence. You seek for an intelligent cause of belief, because good reasons for belief are not forthcoming. But the force of such an argument, even if it be good as far as it goes, must evidently be transient. With the growth of knowledge its value must vanish. When man's familiar convictions are solidly established, a speculative position will have been reached where it will be wholly worthless. Thus the completion of what you assume to be the Divine purpose, will apparently destroy your argument for the Divine existence!"

It would be interesting, and not wholly irrelevant, to ask whether, as a matter of historic fact, the growth of knowledge has so far diminished our sense of the mysteries by which we are surrounded. But the enquiry would take us too far afield, and it is simpler to suppose that the contingency contemplated by the objector has actually occurred, and to consider what bearing such an event would have on the argument under consideration.

Let us then assume that we have among us a body of philosophers who are not only well acquainted with all the difficulties which have been, or might be, suggested by the unsparing use of " methodological doubt," but are happy in the possession of satisfactory replies. They are not as other men. They suffer from no intellectual perplexities. Their creed is defaced by no ragged edges, no discords unresolved, no beliefs whose strength outruns their evidence. Whenever proof is demanded it is forthcoming, and all their familiar beliefs are also rational convictions.

Now it is quite true that so far as their own case is concerned, these super-philosophers would not be troubled with doubts, methodological or other. They could not indeed escape from the argument in its first or causal aspect. For their creed is by hypothesis coherent; and it could not be coherent if they insisted on loading it with the theory of intellectual origins characteristic of Naturalism. But if in respect of their own beliefs they cannot disentangle themselves from the argument in its first form, so neither can they ignore the argument in its second form when they are considering the case of beings less richly endowed than themselves. What view, then, would they take of their less instructed predecessors—the unknown billions, mostly dead, who shared their creed without their insight? These unknown billions, it seems, were right. But how came they to be right? Certainly not by taking thought. So far from seeking answers to fundamental questions, it can never have occurred to the vast majority of them that such questions could even be asked. Was chance, then, their teacher?—or selection?—or some supra-mundane third?

Now this, of course, is our old problem; and I am quite unable to see how our super-philosophers, with all their advantages, could provide us with a new solution. They would surely be driven, as we have been driven, to postulate guidance; not indeed to support their own body of beliefs (for this by supposition no longer needs support) but to explain its cosmic history. How, then, can we do otherwise who are so much less happily situated, who have not yet found the answers to our methodological doubts? We are still *in statu pupillari.* Whether we know it or not, whether we like it or not, we are as children living by beliefs unconsciously absorbed from our surroundings, beliefs we rarely question, and, if put to it, could ill defend. If, then, guidance or inspiration must be assumed for other people even by those who have themselves escaped from the limitations by which we are beset, how much more is it required by us whose emancipation is still to come?

§ 6

And what better alternative is open to us? Some may play at universal scepticism; but after all universal scepticism is no more than the conventional make-believe of an intellectual game. Some may flatter themselves that their beliefs are always held with the exact measure of conviction which critical reason requires; but this is a piece of flagrant, even ludicrous self-deception. The doctrine I preach is nearer practical life than the first of these alternatives; nearer speculative truth than the second. I admit that it is neither full nor final—not full, because the issues it directly raises, though vital, are narrow; not final, because it openly declares itself to be, from a philosophic point of view, imperfect, transitory, and provisional. Yet those who are willing to accept it with all these limitations, may rest assured that it is something more than an exhibition of purposeless argumentation. It is based on beliefs that are really believed, and, in some shape or other, really believed by all. It does do something to bring into one perspective the causal and the cognitive aspects of knowledge, which are so impossible to separate and so hard to harmonise. It does enable us dimly to comprehend how beliefs unreasoned but compelling, how conceptions blurred in outline and confused in context, may be, I had almost said *must* be, among the instruments which minister to intellectual development. It does find a place of honour for ethical ideals which seem far beyond our reach; for dreams of beauty which no artist can embody; for metaphysical adventures, which discover no new continents, nor return with any hidden treasure. In a purely naturalistic universe such entities, seemingly so abortive and useless, are but alien impurities. They come we know not whence and are here we know not why. But in a developing universe, informed by purpose and guided by reason, they suggest the highest values to which we can knowingly aspire, and contain, as we may surely hope, the preparation and the presage of a great fulfilment.

CHAPTER XIV

EPILOGUE

§ 1

To readers who have had the patience to follow the arguments of these lectures to the end many questions must have suggested themselves to which no answers are provided. I do not think this could in any circumstances have been avoided. Even had I foreseen the questions, even could I supply the answers, practical considerations must have defeated any attempt to deal with them adequately within my prescribed limits. As I am far less favourably situated, I hardly suppose that either explanation or apology is required for the course I have actually adopted. There are, however, two points, both certain to be raised, which I am unwilling wholly to ignore, however unsatisfying either to others or myself my method of dealing with them may be. They are suggested by the essential character of the conclusion which I have endeavoured to establish.

This conclusion is (as the reader will remember) that for certain difficulties attaching to the familiar beliefs by which we live, the true remedy is to be found in Theism. In other words, Divine guidance must be postulated if we are to maintain the three great values—knowledge, love, and beauty.

Those, however, who, provisionally or otherwise, accept this conclusion, will certainly ask how far it carries us. If God be the presupposition of all these values, then what sort of God? If Divine guidance be indeed necessary, then what sort of guidance? Questions like these are, of course, inevitable, and could be multiplied and subdivided indefinitely. Can we say anything useful about them, within the limits of a brief postscript like the present? I entertain some doubts on the subject, partly perhaps because I fear that such explanations as I can give may produce more misunderstandings than they remove. But I will risk the experiment.

§ 2

Of the two questions thus before us one relates to the nature of God, and the other to the mode of His intervention in the spiritual evolution of man. Of these the first is plainly the most fundamental, but it is the second, unless I am much mistaken, which will be scanned by critics in the least friendly spirit. The first takes us into metaphysical and theological regions so lofty and remote that a precise survey of them seems impossible, and the attempt to make one far beyond our strength of flight. In such circumstances, a certain vagueness of treatment is hardly to be avoided, and may be accepted as not unfitting. The second question, on the other hand, lays emphasis on problems about which science and common sense will expect to have their say. If the evolution of our familiar beliefs has been guided and inspired, anthropologists, psychologists, historians (to mention only these) will certainly wish to know how, in their subjects, guidance and inspiration have been applied, and what mankind has gained by the operation. Some may even misapprehend the situation so far as to suppose that I have been striving to put science in the position of a "revealed" doctrine, basing its authority not on reason or observation, but upon supernatural influences.

This, however, is not merely to misapprehend but to invert the teaching of these lectures. It is true that appeals to inspiration have played, and still play, an important part in ordinary religious polemic. It is true that in such cases inspiration is always treated as a reason for belief. Such and such an event is thought to have occurred, because those who tell us of it were inspired. Such and such a doctrine is accepted as true, because it is revealed in inspired writings or proclaimed by an inspired authority. But this line of thought, however legitimate, is not the one which I have followed in these lectures. It is, indeed, its direct converse. For I do not argue that because certain beliefs are inspired, therefore they must be true. I argue that because they are true (or on the way to truth), therefore they must be inspired. Both arguments in their proper context may be valid. But the second, not the first, is the one on which, in these lectures, I have steadily insisted.

§ 3

I trust that there are few of my readers to whom this correction will seem necessary. What is perhaps more important is to point out that my argument by no means requires me to show the precise mode in which Divine guidance and inspiration affect the course of human evolution. Were any adherent of naturalism to urge that he could not be expected to consider, still less to accept, any doctrine so nearly akin to superstition unless its character and scope were first explained to him with full particularity, I should venture to point out that he entirely misconceives his situation. According to my view he is occupying an indefensible position, and should hasten to make terms. If, on pain of intellectual bankruptcy, he has to regard reason and purpose as guiding the process of cosmic evolution, the fact that neither he nor we know how they play their part is of secondary importance. We do not doubt that (human) reason and purpose were concerned in the construction of Stonehenge, merely because all theories about the action of mind on matter are disputable and disputed. Disputable and disputed they certainly are; but that mind does act on matter remains, notwithstanding, the unshaken conviction of all mankind.

To me, indeed, it seems that inspiration in its widest sense, i.e. the direct action of spirit on spirit, is less difficult to understand than the action of spirit on matter or of matter on spirit. This, I admit, is not the common view. Most people would, I suspect, regard the communication of mind with mind by the help of matter (e.g. by writing or speaking) as the simplest affair in the world; while inspiration, i.e. direct communication without the intermediate aid of any kind of matter, they would treat as mystical illusion.

As regards the broad facts[1] of human intercourse, they may be right. No method of analysing the flow of spiritual intercourse has yet been devised; and it must be admitted that the efficiency of ordinary external signalling is very marvellous. The power of the written and the spoken word seems almost immeasurable, and they have notable auxiliaries. Smiles and frowns, shades of expression which are far beyond verbal description, gestures that are scarcely perceived, changes of intonation too subtle for any musical notation to express, might seem to provide all the mechanism of intellectual and emotional intercommunication which men—or dogs—can require. Yet are we quite sure? Who is there, reflecting on the mental epidemics which may afflict a whole generation, on the eager subservience commonly shown to the fashion of the hour, on the swaying humours of a crowd, on the overwhelming waves of national emotion, on the influence silently, even unconsciously, exercised by certain individuals, who is there (I say), reflecting on these familiar things, who is not haunted by the suspicion that something more is happening between human souls than even the most admirable system of external signalling will wholly account for ?

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[1] As I have observed before, telepathy seems to be experimentally established—but so far only as an exceptional phenomenon.

I am not sure ; and, speaking strictly, no decision on the point is really material to my argument. But one thing is clear. If Theism be true, and if "inspiration," as I have described it, really occurs, we can hardly suppose that only human spirits directly influence each other. May we not, and, if there be force in my arguments, *must* we not, also hold that inspiration, flowing from some diviner source, assists the long ascent of knowledge, love, and æsthetic joy, from their primitive beginnings, through the dimness of our present twilight, to a future of unknown splendour ? Whatever else may be said of such a creed, it is at least more reasonable than simple naturalism.

§ 4

But does not this bring us back to the first of the two questions asked at the beginning of this epilogue—namely, what kind of Theism is required by the argument from "values" which I have endeavoured to develop?

To this enquiry, legitimate as it is, I do not propose to attempt anything in the nature of a full reply. But I hazard the following observations for what they may be worth.

To begin with, we must remember that the line of thought we have been pursuing does not profess to lead us towards a philosophy, still less to supply us with a philosophy ready made. Its treatment of Theism is as remote from the constructive efforts of metaphysical idealism in any of its forms, as it is from the endeavour to extract from experience a belief in God by means of the well-known "argument from design." You may say, if you please, that like the idealist philosophy in the hands of some of its ablest exponents, my theory declares the reality of God to be involved in the possibility of knowledge. You may add that like the "argument from design" it infers the being of God from the character of His works. And as rough approximations I suppose that both statements are defensible. Nevertheless it must be owned that while the likenesses are superficial the differences are profound, and that we may possibly find the contrasts more instructive than the resemblances.

Of these contrasts the most important depends upon a characteristic which the metaphysics of the Real shares with the "argument from design," profoundly as these modes of thought differ in every other respect. Neither of them is very ready to draw any distinction between God's relation to one part of the universe and His relation to another. If, taking the "argument from design" in its simplest form, He be regarded as the external creator of all the world, it seems natural to think of Him as the creator in the same sense and to the same degree of every part of it—of the good and the bad, the pleasurable and the painful, the sublime and the petty, the beautiful and the mean. If, again, taking an idealistic view, He be regarded as Spirit underlying all the universe of appearance, the Essential Reality to whose perfection all that is makes contribution, then again He would seem to be equally related to all subordinate values, be these high or low, be they good, bad, or simply indifferent.

These roughly outlined illustrations are only designed to indicate, what I conceive to be the fact, that when our thoughts about the Divine begin with metaphysics they do not easily include preferential action by God in the "phenomenal" world, nor quasi-personal intercourse between Him and finite spirits. Pantheism, for example, would exclude both. If, on the other hand, they begin, not with metaphysics, but with religion, the tendency is exactly reversed. For religion leans naturally to the view that God (to put the matter bluntly) has preferences, that He favours the good, that in the end He over-rules the evil, that between Him and finite spirits there is something that can best be described as a personal relation. Plainly this was so in the early stages of religious development, when gods were tribal or national. But it was no passing phase; and I believe the tendency to be as pronounced among the religious members of the most advanced of modern communities as it ever was among their more primitive predecessors.

§ 5

With which of the two types, thus broadly and most imperfectly characterised, do the conclusions of these lectures most easily harmonise? Obviously with that which I have called religious rather than with those which I have described as metaphysical. They certainly involve preferential action; they are certainly most easily expressed in terms which imply special relations between the Supreme Reality and finite spirits; they certainly suggest that the Supreme Reality itself possesses among its infinite attributes what we can best describe as personality. The postulate therefore on which, according to my contention, knowledge and other great values depend, involves conceptions which are somewhat alien to those speculations which strive to embrace the whole of things in some vast intellectual network, but on the other hand are closely akin to the modes of thought and feeling which, in the familiar language of theology, depend on the relation between man and his Maker. It takes its colouring, so to speak, from the religious rather than from the metaphysical end of the spectrum of the Real. That both these conceptions are inadequate I am the first to admit. That we should strive to recombine the spectral colours into the "white radiance of eternity" I do not doubt. Nothing short of this will give full contentment to the soul of man. Those who rest in the "metaphysical" point of view too abstractly treated, will find few followers (outside the schools) till they have found some method of absorbing "religious" elements into their scheme of thought. Those who start from a "religious" point of view too narrowly conceived, will always be haunted by a sense of its inadequacy. The complete amalgamation of the two is the unfinished task of the higher philosophy. But, in the meanwhile, let it not be forgotten that for those who accept the main contention of these lectures something more than deism or pantheism, something other than doctrines of an Absolute about which everything can be said, or a One about which nothing can be said, is needful. Theism of a "religious" type is necessary, if the great values on which depend all our higher life are to be reasonably sustained.

NOTE

I AM much dissatisfied with the terminology employed in the last two sections, but know not how to improve upon it. I hope, however, that it is intelligible; and in any case it can hardly mislead if it be remembered that the last thing I wish to suggest is that metaphysics cannot be religious or that religion cannot be metaphysical.

APPENDIX

PROBABILITY, CALCULABLE AND INTUITIVE

[Reprinted from "THEISM AND HUMANISM"]

I

I WISH I were a mathematician. There is in the history of the mathematical sciences, as in their substance, something that strangely stirs the imagination even of the most ignorant. Its younger sister, Logic, is as abstract, and its claims are yet wider. But it has never shaken itself free from a certain pretentious futility: it always seems to be telling us, in language quite unnecessarily technical, what we understood much better before it was explained. It never helps to discover, though it may guarantee discovery; it never persuades, though it may show that persuasion has been legitimate; it never aids the work of thought, it only acts as its auditor and accountant-general. I am not referring, of course, to what I see described in recent works as "modern scientific logic." Of this I do not presume to speak. Still less am I referring to so-called Inductive Logic. Of this it is scarce worth while to speak. I refer to their more famous predecessor, the formal logic of the schools.

But in what different tones must we speak of mathematics! Mill, if I remember rightly, said it was as full of mysteries as theology. But while the value of theology for knowledge is disputed, the value of mathematics for knowledge is indisputable. Its triumphs can be appreciated by the most foolish, they appeal to the most material. If they seem sometimes lost to ordinary view in the realms of abstract infinities, they do not disdain to serve us in the humbler fields of practice. They have helped mankind to all the greatest generalisations about the physical universe: and without them we should still be fumbling over simple problems of practical mechanics, entangled in a costly and ineffectual empiricism.

But while we thank the mathematician for his aid in conquering Nature, we envy him his powers of understanding her. Though he deals, it would seem, entirely with abstractions, they are abstractions which, at his persuasion, supply the key to the profoundest secrets of the physical universe. He holds the clues to mazes where the clearest intellect, unaided, would wander hopelessly astray. He belongs to a privileged caste.

I intend no serious qualification of this high praise when I add that, as regards the immediate subject of this lecture, I mean Probability, mathematicians do not seem to have given ignorant enquirers like myself all the aid which perhaps we have a right to ask. They have treated the subject as a branch of applied mathematics. They have supplied us with much excellent theory. They have exercised admirable skill in the solution of problems. But I own that, when we enquire into the rational basis of all this imposing superstructure, their explanations, from the lay point of view, leave much to be desired.

"Probability," says an often-quoted phrase of Butler, "is the guide of life." But the Bishop did not define the term; and he wrote before the theory of probability had attained to all its present dignities. Neither D'Alembert nor Laplace had discussed it. Quetelet had not applied it to sociology, nor Maxwell to physics. Jevons had not described it as the "noblest creation of the intellect." It is doubtful whether Butler meant by it exactly what the mathematicians mean by it, and certain that he did not suspect any lurking ambiguity in the expression.

Nor, indeed, would the existence of such ambiguity be commonly admitted by any school of thought. The ordinary view is that the theory of probabilities is, as Laplace described it, "common sense reduced to calculation." That there could be two kinds of probability, only one of which fitted this description, would be generally regarded as a heresy. But it is a heresy in which I myself believe; and which, with much diffidence, I now propose to defend.

II

The well-known paradox of the theory of probabilities is that, to all seeming, it can extract knowledge from ignorance and certainty from doubt. The point cannot be better put than by Poincaré in discussing the physical theory of gases, where the doctrine of probability finds an important application. Let me give you his view—partly in paraphrase, partly in translation. "For omniscience," he says in substance, "chance would not exist. It is but the measure of our ignorance. When we describe an event as accidental we mean no more than that we do not fully comprehend the conditions by which it was brought about.

"But is this the full truth of the matter? Are not the laws of chance a source of knowledge?

And, stranger still, is it not sometimes easier to generalise (say) about random movements than about movements which obey even a simple law—witness the kinetic theory of gases? And, if this be so, how can chance be the equivalent of ignorance? Ask a physicist to explain what goes on in a gas. He might, perhaps, express his views in some such terms as these: 'You wish me to tell you about these complex phenomena. If by ill luck I happened to know the laws which govern them, I should be helpless. I should be lost in endless calculations, and could never hope to supply you with an answer to your questions. Fortunately for both of us, I am completely ignorant about the matter; I can, therefore, supply you with an answer at once. This may seem odd. But there is something odder still, namely, that my answer will be right.' "

Now, what are the conditions which make it possible thus to extract a correct answer from material apparently so unpromising? They would seem to be a special combination of ignorance and knowledge, the joint effect of which is to justify us in supposing that the particular collection of facts or events with which we are concerned are happening "at random." If we could calculate the complex causes which determine the fall of a penny, or the collisions of a molecule, we might conceivably deal with pennies or molecules individually; and the calculus of probability might be dispensed with. But we cannot; ignorance, therefore, real or assumed, is thus one of the conditions required to provide us with the kind of chaos to which the doctrine of chances may most fittingly be applied. But there is another condition not less needful, namely, knowledge—the knowledge that no extraneous cause or internal tendency is infecting our chaotic group with some bias or drift whereby its required randomness would be destroyed. Our penny must be symmetrical, and Maxwell's demons [1] must not meddle with the molecules.

The slow disintegration of radium admirably illustrates the behaviour of a group or collection possessing all the qualities which we require. The myriad atoms of which the minutest visible fragment is composed are numerous enough to neutralise eccentricities such as those which, in the case of a game of chance, we call "runs of luck." Of these atoms we have no individual knowledge. What we know of one we know of all; and we treat them not only as a collection, but as a collection made at random. Now, physicists tell us that out of any such random collection a certain proportion will disintegrate in a given time; and always the same proportion. But whence comes their confidence in the permanence of this ratio? Why are they so assured of its fixity that these random explosions are thought to provide us with a better time-keeper than the astronomical changes which have served mankind in that capacity through immemorial ages? The reason is that we have here the necessary ignorance and the necessary knowledge in a very complete form. Nothing can well exceed our ignorance and the differences between one individual radium atom and another, though relevant differences there must be.

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[1] Maxwell, as all who interest themselves in physics are aware, arrived at very interesting conclusions by considering what would happen if little demons interfered with the random motions of the molecules constituting a gas.

Nothing, again, seems better assured than our knowledge that no special bias or drift will make one collection of these atoms behave differently from another. For the atomic disintegration is due to no external shock or mutual reaction which might affect not one atom only, but the whole group. A milligram of radium is not like a magazine of shells, where if one spontaneously explodes all the rest may follow suit. The disruption of the atom is due to some internal principle of decay whose effects no known external agent can either hasten or retard. Although, therefore, the proportion of atoms which will disintegrate in a given time can only be discovered, like the annual death-rate among men, by observation, yet once discovered it is discovered for ever. Our human death-rate not only may change, but does change. The death-rate of radium atoms changes not. In the one case, causes are in operation which modify both the organism and the surroundings on which its life depends. In the other case, it would seem that the average of successive generations of atoms does not vary, and that, once brought into existence, they severally run their appointed course unaffected by each other or by the world outside.

So far we have been concerned with groups or collections or series; and about these the doctrine of chances and the theory of error may apparently supply most valuable information. But in practical affairs—nay, even in many questions of scientific speculation—we are yet more concerned about individual happenings. We have, therefore, next to ask how we can infer the probability of a particular event from our knowledge of some group or series to which it belongs.

There seems at first sight no difficulty in this, provided we have sufficient knowledge of the group or series of which the particular event is a member. If we know that a tossed penny will in the long run give heads and tails equally often, we do not hesitate to declare that the chances of a particular throw giving "heads" are even. To expect in any given case heads rather than tails, or tails rather than heads, is inconsistent with the objective knowledge of the series which by hypothesis we actually possess.

But what if our information about the group or series is much less than this? Suppose that, instead of knowing that the two possible alternatives do in fact occur equally often, we are in the less advantageous position of knowing no reason why they should *not* occur equally often. We ought, I suppose, still to regard the chances of a particular toss as even; although this estimate, expressed by the same fraction ($\frac{1}{2}$) and held with the same confidence, is apparently a conclusion based on ignorance, whereas the first conclusion was apparently based on knowledge.

If, for example, we know that a die is fairly made and fairly thrown, we can tell how often a particular number will turn up in a long series of throws, and we can tell what the chances are that it will turn up on the occasion of a single throw. Moreover, the two conclusions seem to be logically connected.

But if we know that the die is loaded we can no longer say how the numbers will be distributed in a series of throws, however long, though we are sure that the distribution will be very different from what it would have been had the die been a fair one. Nevertheless, we can still say (before the event) what the chances are of a particular number turning up on a single throw; and these chances are exactly the same whether the die be loaded or whether it be fair—namely, one to five. Our objective knowledge of the group or series has vanished, but, with the theory of probability to help us, our subjective conviction on this point apparently remains unchanged.

There is here, surely, a rather awkward transition from the "objective" to the "subjective" point of view. We were dealing, in the first case, with groups or series of events about which the doctrine of chances enabled us to say something positive, something which experience would always confirm if the groups or series were large enough. A perfect calculator, endowed with complete knowledge of all the separate group members, would have no correction to make in our conclusions. His information would be more complete than our own, but not more accurate. It is true that for him "averages" would have no interest and "chance" no meaning. Nevertheless, he would agree that in a long series of fair throws of a fair die any selected face would turn up one-sixth times as often as all the faces taken together. But in the second case this is no longer so. Foresight based on complete knowledge would apparently differ from foresight based on the calculation of chances. Our calculator would be aware of the exact manner in which the die was loaded, and of the exact advantage which this gave to certain numbers. He would, therefore, know that in asserting the chance of any particular number turning up on the first throw to be one to five, we were wrong. In what sense, then, do we deem ourselves to have been right?

The answer, I suppose, is that we were right *not* about a group of throws made with *this* loaded die, but about a group of such groups made with dice loaded at random—a group in which "randomness" was so happily preserved amongst its constituent groups that its absence within each of these groups was immaterial, and no one of the six alternative numbers was favoured above another.

A similar reply might be given if we suppose our ignorance carried yet a step further. Instead of knowing that our die was loaded, and being ignorant only of the manner of its loading, we might be entirely ignorant whether it was loaded or not. The chances of a particular number turning up on the first throw would still be one to five. But the series to which this estimate would refer would neither be one composed of fair throws with a fair die, nor one composed of a series of throws with dice loaded at random, but one composed of a series of throws with dice chosen at random from a random collection of dice, loaded and not loaded!

It seems plain that we have no experimental knowledge of series piled on series after this fashion. Our conclusions about them are not based on observation, nor collected from statistics. They are arrived at *a priori*; and when the character of a series is arrived at *a priori*, the probability of a particular event belonging to it can be arrived at independently by the same method. No reference to the series is required. The reason we estimate the chances against any one of the six possible throws of a die as five to one under each and all of the suppositions we have been discussing is that under none of them have we any ground for thinking any one of the six more probable than another;—even though we may have ground for thinking that in a series of throws, made with that particular die, some number, to us unknown, will in fact turn up with exceptional frequency.

The most characteristic examples, therefore, of problems in probability depend for their solution on a bold use of the "principle of sufficient reason." We treat alternatives as equally likely when we cannot see any ground for supposing that one is more likely than another. This seems sensible enough; but how far may we carry this process of extracting knowledge from ignorance? An agnostic declines to offer any opinion on the being of God because it is a matter about which he professes to know nothing. But the universe either has a spiritual cause, or it has not. If the agnostic is as ignorant as he supposes, he cannot have any reason for preferring the first alternative to the second, or the second to the first. Must he, therefore, conclude that the chances of Theism are even? The man who knows this knows much. He knows, or may know, that God's existence is slightly more probable than his own chance of winning a coup at Monte Carlo. He knows, or may know, the exact fraction by which the two probabilities differ. How, then, can he call himself an agnostic?

Every one must, I think, feel that such reasoning involves a misuse of the theory of probability. But is that misuse without some justification? The theory, unless I misread it, permits, or rather requires, us to express by the same fraction probabilities based on what is little less than complete knowledge, and probabilities based on what is little more than complete ignorance. To arrive at a clear conclusion, it seems only necessary to apply the " law of sufficient reason " to defined alternatives ; and it is apparently a matter of perfect indifference whether we apply this law in its affirmative or its negative shape ; whether we say " there is every reason for believing that such and such alternatives happen equally often," or whether we say " there is no reason for thinking that one alternative happens more often than the other." I do not criticise this method ; still less do I quarrel with it. On the contrary, I am lost in admiration of this instrument of investigation, the quality of whose output seems to depend so little on the sort of raw material with which it is supplied.

III

My object, indeed, is neither to discuss the basis on which rests the calculus of probabilities—a task for which I own myself totally unfit—nor yet to show that a certain obscurity hangs over the limits within which it may properly be employed. I desire rather to suggest that, wherever those limits are placed, there lies behind them a kind of probability yet more fundamental, about which the mathematical methods can tell us nothing, though it possesses supreme value as a " guide of life."

Wherein lies the distinction between the two? In this: the doctrine of calculable probability (if I may so call it) has its only application, or its only assured application, within groups whose character is either postulated, or is independently arrived at by inference and observation. These groups, be they natural or conventional, provide a framework, marking out a region wherein prevails the kind of ignorance which is the subjective reflection of objective " randomness." This is the kind of ignorance which the calculus of probabilities can most successfully transmute into knowledge; and herein lies the reason why the discoverers of the calculus found their original inspiration in the hazards of the gambling-table, and why their successors still find in games of chance its happiest illustrations. For in games of chance the group framework is provided by convention; perfect " randomness " is secured by fitting devices; and he who attempts to modify it is expelled from society as a cheat.

None of these observations apply to the kind of probability on whose importance I am now insisting. If calculable probability be indeed " common sense reduced to calculation," intuitive probability lies deeper. It supports common sense, and it supplies the ultimate ground—be it secure or insecure—of all work-a-day practice and all scientific theory. It has nothing to do with " randomness "; it knows nothing of averages; it obeys no formal laws; no light is thrown on it by cards or dice; it cannot be reduced to calculation. How, then, is it to be treated? What place is it to occupy in our general scheme?

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